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A BUSINESSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 7 | Publication at Minneapolis, Minn. Accepted as Controlled Circulation | APRIL 18, 1960 | Subscription Rates: $5 for 1 year, $9 for 2 years | No. 16

Non-Farm Fertilizer Use 219,000 Tons In 7-State Region

Survey Results Given For 1958-59 Use in Atlantic Coast Area

WASHINGTON — Consumption of commercial fertilizer by non-farm households in the Middle Atlantic states (New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia and West Virginia) for the year ending June 30, 1959, was about 219,000 tons, according to a recent survey conducted by Arnon L. Mehring. Mr. Mehring, a private fertilizer consultant, was formerly senior chemist and later fertilizer staff specialist with the U.S. Department of Agriculture in charge of fertilizer statistics.

EDITOR'S NOTE: This is the second in a series of reports on regional studies of fertilizer use by non-farm homes being conducted by the author, Arnon L. Mehring. His first report covered non-farm consumption in the New England states. (Croplife, Jan. 11, page 1.) The present article showing results of a recent survey in the Middle Atlantic states, is excerpted from the full text appearing in the "Plant Food Review," a publication of the National Plant Food Institute, Washington, D.C.

Heaviest non-farm use of fertilizers was in Pennsylvania where an estimated 72,000 tons were used. New York was second, with 57,800 tons.

The total retail value of the fertilizer used by non-farm homes in the

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At Purdue Conference . . .

'Regulation By Press Conference' 'Judgment By Decree' Attacked

By FRED E. TUNKS
Croplife Staff

LAFAYETTE, IND.—The speaker behind the rostrum fingered a small card handed to him by a speakers' table companion. Then he read aloud: "Fight Cancer—Avoid Food."

The audience's reaction agreed with the tone in which Dr. Herrell F. DeGraff, Babcock professor of food economics, Cornell University, read these words. A humorous and ridiculous proclamation, yes, but a strong hint of what many segments of the food industry are up against because of agricultural chemical regulation "by press conference" and "judgment by decree, rather than as a result of scientific evidence" and because of an atmosphere of "food fads instead of food facts" being created for the consumer.

Dr. DeGraff was one of 18 highly regarded speakers who appeared before the assembly of the 10th annual National Institute of Animal Agriculture recently in the Memorial Union Building on the Purdue University campus to project the problems spotlighted by the "cranberry and caponette incidents" and to help agricultural leaders develop ideas which can be used to successfully deal with these problems.

The theme of the conference was "Chemicals and Our Food Supply."

Dr. DeGraff, the conference's final speaker, wrapped up much of the day and a half of discussion with this outline of "three major issues" which animal agriculture must face as "new dimensions of the food business."

"1. The wholesomeness of our food. It must be above suspicion.

"2. Proper use of the many, many chemicals used in food production and processing.

"3. Responsible administration of intelligent legislation."

An approach to solving some of the situations which have arisen from food chemical "scares" and Food and Drug Administration "crackdowns" was that of "proper use" of agricultural chemicals as dictated by "reasonable regulation."

Several speakers concluded that the next steps to be taken within the food industry include informing the

(Turn to CARCINOGENS, page 6)

Special Symposium on Farm Chemicals Set for USDA's Research Center

WASHINGTON—A special symposium on chemicals in agriculture will be held at the Agricultural Research Center of the U.S. Department of Agriculture, Beltsville, Md., April 27-29, it has been announced. Papers will be presented by leading scientific authorities.

Called "The Nature and Fate of Chemicals Applied to Soils, Plants and Animals," the symposium is designed chiefly for scientists in public research institutions and in industry. The three-day meeting is being sponsored by USDA's Agricultural Research Service.

Papers will cover three broad aspects of chemicals in agriculture. Speakers the first morning will summarize the responsibility of various government agencies and industry toward the problem. The speakers include: Theodore C. Byerly, ARS deputy administrator of farm research; William L. Popham, ARS deputy administrator of regulatory programs; R. S. Roe, U.S. Food and Drug Administration; G. R. Ferguson, vice-president of the National Agricultural Chemicals Assn., and W. J. Hayes of the U.S. Public Health Service.

On the first afternoon and continuing through noon the second day, speakers will review recent progress and problems in the use of various important groups of agricultural chemicals. These speakers will include: William B. Ennis, Jr., ARS crops research division; Edward F. Knipling, ARS entomology research division; Ned R. Ellis, ARS animal husbandry research division; Aurel O. Foster, ARS animal disease and parasite research division; L. A. Dean, ARS soil and water conservation research division; Walter M. Carleton, ARS agricultural engineering research division; Lyman Henderson, market quality research division of USDA's Agricultural Marketing Service and Aubrey M. Lee, animal disease and parasite research ARS animal disease and parasite research division.

Speakers on the afternoon of April 28 and the final morning will cover in some detail what is known about the fate of agricultural chemicals once they are applied to plants, soil and animals. Scheduled to speak are: William E. Westlake, ARS entomology research division; Albert L. Taylor and Warren C. Shaw, ARS crops research division; R. D. Radeleff, ARS animal disease and parasite research division; F. W. Plapp, Jr., ARS entomology research division; T. J. Sheets and John W. Mitchell, also of the ARS crops research division, Richard W. Brown, ARS animal disease and parasite research division, and Joseph F. Sykes, ARS animal husbandry research division.

Florida's Fire Ant Battle Hits Snag

TALLAHASSEE, FLA. — The battle against the fire ant, which has infested many an acre of farm and pasture land in the South, is running into trouble in Florida. The ant is so far winning the battle, it seems.

The State Plant Board has spent nearly $1,000,000 in the program to eradicate the ants. But in spite of this survey crews say they have located 358,003 acres of new infestation during the past month. This, it is pointed out, is more than the total acreage treated in the state since the program began.

It is estimated the total infested acreage has jumped from 1,059,572 to 1,541,739, and W. G. Cowperthwaite, state plant commissioner, said additional numbers of acreage are being added to the total every day.

The fight against the ant has been aggravated by protests from a number of wildlife groups such as Florida's Game and Fresh Water Fish Commission, and the Audubon Society.

Mr. Cowperthwaite has argued the lovers of wildlife are wrong in their conclusions and in his report on activities for the year he said:

"I believe that some day in the not too distant future, the same forces that fought so hard to stop the eradication program will take steps to protect wildlife—not a mythical protection from insecticides, but a very real protection from this ant."

Changes in Publishing Plan and Frequency Announced for Croplife Beginning in June

MINNEAPOLIS, MINN.—Changes in frequency of publication, increased depth of news coverage and improvements in typography are among the plans being made for Croplife beginning with the issue of June 6. At that time, the publication will be issued on an every-other-week basis for a total of 26 times a year, according to Milton B. Kihlstrum, president of The Miller Publishing Co., Croplife's parent organization.

The new Croplife will be published in two alternating editions: (1) the Production Edition, and (2) the Marketing Edition. These will appear each second week, alternately, Mr. Kihlstrum said.

The change will mark the consolidation of some of the present areas served by the Marketing Edition, but circulation of the Production Edition will remain essentially as it is presently. The latter reaches management and top production personnel in the fertilizer and pesticide manufacturing field on a nation-wide basis.

Marketing Editions will also reach management personnel nationally, plus dealers of agricultural chemical products in the midwestern and southern states, with additional dealer circulation in New York State, Pennsylvania and West Virginia.

Croplife's coverage of dealers in this important section of the country has proved helpful in pointing up the necessity of employing modern merchandising methods to increase sales of fertilizers, pesticides, weed killers and other chemical products for farm use. It is in these states where the dealer is a particularly important link in the marketing chain between manufacturer and user.

In the western states, however, the situation has become one in which the manufacturer and mixer, supplying large customers, frequently performs

(Turn to CHANGES, page 31)

J. D. DeHaan N. F. Spencer

Agrico Announces Three Appointments

NEW YORK — American Agricultural Chemical Co. has announced three appointments, in its headquarters, agronomy and administrative staffs.

George Wilson

J. D. DeHaan has been assigned to the New York headquarters staff to assist in coordinating sales promotion and training under R. L. Waring, Jr., sales manager. Mr. DeHaan joined Agrico in 1954 as a regional agronomist.

Norman F. Spencer has been named a regional agronomist for Agrico and will be located at Fulton, Ill. He replaces Mr. DeHaan. Mr. Spencer is a graduate of Southern Illinois University where he received a bachelor of science degree in 1958 and a master of science degree in 1959.

George Wilson has joined the company's administrative staff as legal-counsel, announced C. M. Powell, president. Mr. Wilson, who has degrees in law and engineering, formerly was with Esso Research and Engineering Co., Linden, N.J.

Construction Starts On New Fertilizer Plant in Iowa

OSKALOOSA, IOWA — Construction has started here on a new fertilizer manufacturing plant at Allied Gas & Chemical Co.'s bulk facility, announced Henry Hackert. The new plant will blend pelleted chemicals into fertilizers.

A new 20 ft. by 60 ft. building, 20 ft. high, will be erected to house the new automatic mixing equipment and provide for 500 tons of fertilizer. Allied will have facilities for handling bulk fertilizers with conveyors for loading trucks and will have a sacking machine. The mixer, push button controlled, is the first made by the Continental Fertilizer Co. of Nevada, Iowa. It has a capacity of 30 tons an hour, and through a series of hoppers automatically handles five different ingredients at a time.

Allied Gas & Chemical also handles liquid fertilizers, with a separate plant at the bulk headquarters here and operates an anhydrous ammonia plant at Fremont.

Bindweed Dangers Voiced by Specialist

BUSHLAND, TEXAS — Bindweed has become the number one field pest in many parts of Texas and is causing farmers an annual loss of $5 million yearly, according to A. F. Wiese, Southwestern Great Plains Field Station.

Mr. Wiese, an authority on bindweed control and eradication, says the weed can ruin a good farm if not stopped. After the weeds become widespread over a farm, the cost of eradication is extremely high. By using certain chemicals the cost may range from $109 to $360 per acre, and the land may be sterile for two or three years.

Bindweed, or possession vine as it is known in some areas, has been present in West Texas for a long time. Yet its spread has been much more rapid the last few years. Many counties now have bindweed control districts where farmers may work together in controlling the field pests.

Allied Chemical Executive To Retire After 47 Years

NEW YORK—George A. Benington, vice president, advertising and trade relations for Allied Chemical Corp., plans to retire in April after a career of 47 years in industry.

A native of New York, Mr. Benington was employed by W. R. Grace & Co. from 1913 to 1923, when he joined the Bowker Chemical Co., a subsidiary of American Agricultural Chemical Co., as vice president. He later became assistant to the president and vice president of American Agricultural Chemical.

In 1933 Mr. Benington joined Mutual Chemical Company of America as vice president. In 1942 he was named executive vice president and a year later president. He served in that capacity until Mutual was acquired by Allied Chemical in 1954, and then was president of the Mutual division until it became a part of Solvay process division. He was named Allied Chemical vice president —marketing in 1957.

Insecticide Handbook Issued

WASHINGTON — The 1960 revision of the handbook on insecticide recommendations has been issued by the U.S. Department of Agriculture.

"Insecticide Recommendations of the Entomology Research Division for the Control of Insects Attacking Crops and Livestock," Agriculture Handbook No. 120, is published annually by USDA's Agricultural Research Service. Issued to extension agents and others involved in the control of agricultural insect pests, the handbook records suggested uses of chemicals for the protection of crops and livestock for the 1960 growing season.

Soil Club Started

WINNIPEG—A soil and crop management club will be initiated this year for Manitoba farmers interested in general soil maangement, Hon. George Hutton, Manitoba minister of agriculture and conservation, announced recently.

The new club program is a slightly modified version of the established soil conservation club program. In contrast to the latter, the new program will emphasize soil and crop problems other than erosion. It is expected that soil and crop management clubs will be of most value to farmers on the flat land of the Red River Valley and eastern Manitoba.

Two new clubs are ready to be organized but at least eight more are anticipated, Mr. Hutton said. Membership in each club will range from 10 to 25 members.

AERIAL SPRAYING FIRM

LONGMONT, COLO. — Carter's Aerial Spraying Co. has filed articles of incorporation listing as incorporators-directors Norman Carter, and Robert and Helene Edmiston.

The Week in WASHINGTON

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — Confusion and disagreement were evident at a recent panel-type hearing before the House Interstate and Foreign Commerce Committee, which met here to discuss views on inclusion of a Delaney-type amendment in proposed legislation which would provide for tolerance levels for use of colors added to foods and cosmetics. Scientists, industry personnel and government persons were in attendance.

The confusion at the hearing seemed to take two or three aspects. Some scientists connected with government agencies appeared adamant in support of the current tight ban of the Delaney amendment regarding use of so-called carcinogens and would prohibit any tolerance of any kind.

Some said they could not countenance the use of carcinogens in food, but they said it would be wrong to lay a rigid ban on the use of certain chemicals because there might come the day when the economic impact of a rigid ban would cause serious upsets to the whole economy.

Some of the scientists urged that Congress amend the Delaney clause to permit responsibility on the part of the Department of Health, Education and Welfare to authorize use of so-called carcinogens if it were shown that there were no residues in end products or conditions were shown to be safe.

(In this connection, industry groups, and others have urged that the Delaney clause be modified to read: " . . . additive shall be deemed unsafe . . . if the additive is found **in amounts and under conditions reasonably related to the intended use** to induce cancer when ingested by man or animal." The boldface words represent an addition to the present clause. This addition, it is said, would still protect the public but would permit scientific judgment in evaluating additives.)

One group of scientists seemed to take the position that they also were devoted to the firm protection of public health but they wanted a change in the Delaney clause. However, it was not clear just where they stood.

In short, it would seem that the panel, while offering various opinions, may have confused the committee to a considerable extent on this broad and difficult subject. As a result, some observers said, the committee might decide that it is now too difficult to unscramble the omelet and let the controversy ride over to another year. However, if there is no change in the food additives amendment and its Delaney clause, difficult problems and inequities for agriculture will continue.

Meanwhile, the public display of scientists before the House committee may not be the finale of current discussions. There is a presidential committee looking into the cancer and Delaney clause problem. This group did not testify last week, but perhaps the congressmen may await the findings of this committee before doing anything further. (Also, some persons feel that the Agriculture Department eventually will have to be brought into this thing, and that Secretary Flemming may be brought back. The secretary has gone on record as favoring the Delaney clause.)

One congressman on the committee, Rep. Paul Rogers (D., Fla.) did an effective job in questioning. He asked the scientists about the carcinogenic potential in some common products which feature, for example, League of Women Voters tea parties. Institute of Health officials agreed that components of some of these commodities, if given in large doses, might be carcinogens.

The Florida congressman persisted that there were other products used daily in most every home which, if fed in concentrated doses, would be carcinogens. The answer was one of agreement.

Rep. Rogers asked for a simple definition of a carcinogen, and the panel agreed that this could not be done. He asked about a standard of testing, and there were disagreement and indications of inability to give a standard test.

Rep. Rogers was trying to show that if the Delaney amendment were to stand its absoluteness, possibly the alternatives to the public would be either to starve to death, since few natural foods would be permitted, or die of cancer.

This reporter feels that Congress, in its oblique ways, might still send the Delaney clause into obscurity at some future date.

Meanwhile, some observers at the hearing felt that the discussions showed clearly that Congress cannot properly legislate on something where there are no standards, where not enough is known to be specific.

(Some of the scientists felt that the language in the House bill should be deleted, and a number indicated that changes are necessary.

(Also, some said that for certain things there probably should be no tolerances, but it was noted that there are tolerances for radiation carcinogenesis and that there should be no difference with regard to chemicals. Present legislation or proposals, it was said, are too rigid to be practical.

(How can Congress legislate to provide protection, it is asked, when there is not agreement or enough knowledge on what or how protection is to be provided?

(Some still feel that there is a good chance that congressmen will recognize the need to modify the Delaney type legislation and do something about it. Thus, it is said, it is of real importance that industry people and others continue to make contacts with lawmakers, including personal contacts when they are in their home districts.)

HYDROXYACETOXYHEXADECENE

WASHINGTON—Increased effectiveness in controlling gyspy moths may result from the isolation and partial identification of a natural attractant found in female moths, a U.S. Department of Agriculture scientist reported. A crude form of this substance is used to lure male moths into traps in order to locate infestations and determine control requirements.

Martin Jacobson, chemist of USDA's Agricultural Research Service, told the 137th National American Chemical Society meeting at Cleveland, Ohio, that he and his co-workers have collected and purified a single drop of the attractant. This minute quantity was obtained from the bodies of more than half a million female gypsy moths.

Chemical analysis of the substance, now underway at the agricultural research center in Beltsville, Md., will lead to the making of a far more readily available synthetic lure, scientists believe. The chemical structure has been partially determined to be an ester alcohol, "hydroxyacetoxyhexadecene." If the complete analysis shows that a synthetic attractant can be made cheaply, gypsy moth control programs will be greatly improved by the use of traps on a far larger scale than is now possible, Mr. Jacobson said.

The crude form of this attractant is obtained by crushing segments of the females. For many years use of the crude natural attractant has provided the only reliable method known for determining the location and extent of infestations and checking the effectiveness of sprays used against gypsy moths in the larval or caterpillar stage—the only stage during which they feed.

Simple Alternative . . .

Buyers' Choice: Wormy Apples Or Accepting Use of Chemicals

By DR. BYRON T. SHAW*
Administrator, Agricultural Research Service
U.S. Department of Agriculture
Beltsville, Md.

IT IS HARD FOR anyone not closely associated with agriculture today to realize how utterly dependent we are on chemicals. Chemicals are as essential for efficient production of foods as are tractors, improved varieties of crops, and better breeds of livestock. They play as great a part in the processing and marketing of nutritious, wholesome, and appetizing foods as do our modern methods of refrigeration, packaging, and transportation.

The fact is that consumers have only two choices. They can eat wormy apples, or they can accept the use of chemicals. You and I know that the choice has been made. The wholesome and high quality farm products that pesticides and other agricultural chemicals have helped to provide have become so firmly established in this country that consumers will not buy contaminated, pest-damaged food.

But neither will they tolerate food they think is not safe. They demand assurance that their food is free from any chemical residue that might be harmful in any way.

This is a reasonable demand, and it has long been recognized as such by both federal and state governments. It merits the most careful consideration now because of the questions being raised regarding the safety of certain chemicals used in the production, processing, and marketing of food products. In general, these chemicals fall into three main categories:

(1) Chemicals used to control insects, diseases, weeds, and other pests;

(2) Chemicals applied to plants or added to livestock feed to control or speed up growth; and

(3) Chemicals used during processing and marketing to retard spoilage, maintain fresh quality, and enhance attractiveness and flavor of crop and livestock products.

Some of these chemicals have been in use for many years; others have only recently become available. But all of them are products of research—conducted by the Department of Agriculture, and state agricultural experiment stations, and the chemical and food industries. The safety of these chemicals is a prime consideration at every stage of development and use.

Soil scientists, for example, are concerned with the fate of chemicals in the soil and their effects on beneficial soil microorganisms. In crop, livestock, and entomology research, we look for chemicals that will be effective for particular purposes without doing injury to plants, farm animals, wildlife, or consumers. Agricultural engineers are concerned with developing efficient and safe methods of application. In utilization and marketing research, we seek chemicals that will protect or improve food quality without adversely affecting flavor, nutritive content, or safety of the product. And, finally, nutrition scientists are concerned with chemical residues in foods as they may affect the health and nutritional welfare of consumers.

In carrying out its obligations under the law in regard to pesticide regulation, the department has registered more than 56,000 chemical formulations. Many of these registrations are for chemicals that have residue tolerances established by the Food and Drug Administration. Others are for chemicals that are not allowed to leave residues on food crops or in livestock products. Chemicals that do not meet the standards set by law, when tested under objective, scientific conditions, are not approved. Many insecticides, for example, that are highly effective against crop and livestock pests, have been turned down because of the risk of harmful or illegal residues. There is no evidence that the approved chemicals are unsafe, when used in accordance with instructions.

Nevertheless, doubts are being expressed about many of these chemicals, especially those that appear to cause cancer when fed experimentally in large quantities to certain species of animals. Because of the fear of potential carcinogens, the public tends to question the safety of any chemical residue in food.

As a result we may find that tolerances now set for various chemical residues in raw agricultural products will be removed—that no residues at all will be permitted, no matter how harmless. We may find that use of certain chemicals will be banned, even though they do not leave a detectable residue.

I'm sure livestock producers know what this means. They are already much more restricted than crop producers in the use of insecticides. And they face the possibility of increasing limitations on the means they use to treat animal diseases and on the use of feed additives for more efficient production.

This situation poses a problem for agricultural research. How can we help to maintain and increase the efficiency of food production and at the same time assure consumers that their foods contain no actual or potential health hazards?

I believe research can help in two ways: First, we can develop new chemicals and improved methods of using them that are above suspicion on grounds of safety. Second, we can develop non-chemical methods for doing some of the jobs that are now done with chemicals.

An ideal pesticide is one that lasts long enough to kill pests and then is metabolized, oxidized, or otherwise "used up," so that no residue remains. For example, there is an organic phosphorus insecticide that oxidizes within a few hours after application. Several other pesticides last only for a few days and then disappear through oxidation or other means. The herbicide simazin is metabolized by the corn plant to inactive materials, and most of the pre-planting herbicides now used are dissipated in one way or another before crops are planted.

We may be able to avoid insecticide residues by combining chemical baits with insect attractants and placing them adjacent to but not on the crops themselves. The insects would be attracted away from the crop to the poisoned bait—say along fence rows—and killed. Some of our best current attractants draw only males. However, by destroying the males, reproduction would be halted and the insect population reduced or eliminated.

Studies with a powerful attractant, methyl-eugenol, indicate much promise for this technique as a means of eradicating fruit flies. Plans are shaping up now for a test in the Bonin Islands in the western Pacific, where natural infestations of the oriental fruit fly occur. The methyl-eugenol attractant, mixed with a small amount of insecticide, will be impregnated on small squares of absorbent fiber board and distributed around the islands. If the test is successful, we expect to intensify our efforts to find similar attractants for other insect pests of crops, animals, and man.

Another possibility is through chemical sterilization of male and female insects. The right kind of chemical sterilant used in the field might easily outdo some of the best insecticides now in use. For example, in a hypothetical situation involving a million insects that multiply five times in each generation, an insecticide that kills 90% of the insect population would leave 125,000 insects still alive after the third generation. However, a chemical that would produce 90% sterility without affecting sexual behavior would leave only 125 insects alive after three generations. This is true because all of the 10% surviving the insecticide may reproduce. But in the case of the sterilant, the 10% that remain fertile will mate with infertile flies 9 times out of 10, and thus only 1% will actually reproduce. If we could find chemical sterilants that would leave no residue or that could be combined with attractants, we would have a particularly powerful and safe weapon against insects.

If we could learn how to better control and regulate the size of spray droplets and dust particles used in pesticides, we might find ways to pinpoint application and get good results with only a fraction of the pesticide necessary at present. Here again, residues would be reduced—perhaps even eliminated for all practical purposes.

We may be able to develop chemicals that will kill pests and yet be completely harmless to warm-blooded animals. Pyrethrum and its synthetic counterpart, allerthrin, come close enough to this objective to give us hope that we can find others with the same lack of toxicity to man and animals.

I want to emphasize that in proposing research to develop new chemicals, I do not mean to imply that we should abandon those now in use. As we move ahead in research and education, I feel certain that many of the chemicals now being questioned will be given a clean bill of health. However, we all recognize the need for more efficient ways of controlling crop and livestock pests of all kinds.

In spite of the progress made so far, farmers still lose between $10 and $15 billion worth of production each year to insects, diseases, and weeds. Some $2 billion of this tab is picked up by the livestock industry. Marketing losses due to spoilage organisms are tremendous also—running as high as 40% for some of the highly perishable commodities.

It is not enough, therefore, to look only for safer means of pest control.

Dr. Byron T. Shaw

We must also search for more efficient, more economical methods.

In some cases, we may attain this dual objective through non-chemical or biological methods for doing some of the jobs that are now done with chemicals.

There is nothing new about biological pest control. We've been breeding crop plants to resist disease for more than 50 years. And I doubt if there is a commercial crop being grown today that does not have some kind of disease resistance bred into it. More than half of the 100 new varieties released last year were developed with specific disease resistance in mind.

I must point out that the greatest benefits from biological methods may well come from using them in combination with chemicals. I mentioned earlier the potentials for combining male attractants with insecticides and for using chemical sterilants to halt reproduction. Also, in eradicating large populations of any major insect by self-annihilation, it may be necessary to use chemicals at the beginning to reduce the natural population to a relatively low level and then release defective or diseased insects to finish up the job.

These are some of the ways that research can assure the continued safety and abundance of our food supply. To develop these and other new methods will require considerable strengthening of the research effort in both government and industry.

In looking for safer, more effective chemicals, we need research that will provide complete knowledge of all the factors involved in the use of any promising material—before it goes on the market. We should be able to develop a balance sheet that will account for the chemical from the time it is applied on crops or fed to livestock until its final fate is established. This would require tracing the chemical into and through soils, plants, and animals, and identifying its metabolites or breakdown products wherever they occur. It would call for more precise chemical and bio-assay methods for determining minute amounts of chemical residues and their metabolites on harvested crops and in animal products.

More extensive animal feeding and other tests under controlled conditions are needed to obtain fundamental information on which to base requests for the establishment of residue tolerances. This research would involve the development of criteria and procedures for estimating amounts of pesticides, hormones, antibiotics, or other chemicals in living animal tissues. For example, we should have periodic surgical sampling of cattle fat from inside the abdominal cavity and of other tissues after various periods of time and after use of different

(Turn to WORMY APPLES, page 6)

*From paper presented at National Institute of Animal Agriculture, Purdue University, Lafayette, Ind., April 8, 1980.

INSECT, PLANT DISEASE NOTES

Entomologist Predicts Billbug Banishment From South Carolina

SPARTANBURG, S.C.—According to W. C. Nettles, leader, Clemson College extension entomology and plant disease work, the corn billbug, now largely localized in the Pee Dee area, may one day be banished from corn fields in South Carolina.

For several years now, as noted, county agents have been helping farmers practice and evaluate results of insecticide application, plan better rotations for their farms, and choose substitute crops—all aimed at reducing billbug damage.

As explained by Mr. Nettles, here is how the five-point control program for billbugs now stands:

1. Individual farms and fields may present a different problem. Growers should determine where damage occurred last year and decide on a control program now.

2. Broadcast application of insecticides with fertilizer produced effective results last year—1,908 farmers used recommended treatment of aldrin in fertilizer on 23,158 acres.

3. Proper rotation practices discourage the billbug, which is a pedestrian, going from one field to another. Pee Dee farmers should review their rotation practices, field size and field arrangements, in view of the billbug situation. Proper rotation involves changing to a field some distance away.

4. Planting substitute crops, such as soybeans or grain sorghums, on fields destroyed by billbugs was practiced last year to a limited extent.

5. Efforts have been made by extension workers to train individuals to make billbug counts during September and October. These counts help to determine the needs for insecticides.

Alfalfa Weevils Appear in Georgia

ATHENS, GA.—Alfalfa weevil larvae were infesting alfalfa at 1 to 6 per bud in Hancock, Oconee and Madison counties. Fifty to 70% of plants showing feeding injury. Alfalfa is now 6 in. high. CONTROL: The alfalfa which was observed is now ready for an application of insecticide to control alfalfa weevil larvae.

Light infestations of billbugs were found on corn in Colquitt and Thomas counties.

Plum curculio have been leaving hibernation and appearing on peach trees in orchards since March 31. An average of 0.8 beetle per tree was taken in a commercial orchard on March 31, and 0.9 per tree on April 1. The mean temperature had been above 60° F. for four days before the first curculio were taken from the trees. This insect appears from hibernation in numbers when the mean temperature has been 60° F. or above for several consecutive days. As usual, plum curculio adults appeared from hibernation this year before the time for the petal-fall application of spray for their control.

Peaches here are now ready for the petal-fall application of spray, and peach growers in this area are advised to made this application of parathion or dieldrin and wettable sulfur or Captan immediately.

Light infestations of cabbage aphids were found in Colquitt County. Moderate to heavy infestations on cabbage in Brooks and Lowndes counties.

Light Mexican bean beetle infestations were noted on snap beans in Brooks and Thomas counties.

Light to moderate infestations of aphids were found on tobacco in the plant bed in Mitchell, Colquitt, Thomas, Brooks, Lowndes, Cook, Berrien, Coffee, Wayne and Tattnall counties.

Light infestations of vegetable weevil were noted on tobacco on the plant bed in the above mentioned counties.

Tobacco flea beetle infestations were found on tobacco in the plant bed in Mitchell, Colquitt, Thomas, Brooks, Lowndes, Cook, Berrien, Coffee and Wayne counties. Light to heavy infestations on tobacco in the plant bed in Tattnall County. Light infestations on tobacco in the field in Thomas County.—W. C. Johnson.

Kansas Issues First Weekly Insect Report

MANHATTAN, KANSAS—This is the first weekly survey report (April 4-9) of insect conditions for the 1960 season. The outlook on insects for which annual surveys are made indicates few problems. Grasshoppers are rated as light in four areas in central and western Kansas with eastern Kansas rated as non-economic. Chinch bugs are not as numerous as last year. European corn borer populations are about one half as many as found in stalks a year ago.

The following statement on mosaic outlook was prepared by Somsen, Painter and Sill: "Wheat streak mosaic is not expected to be a serious problem to the present wheat crop. Late planting plus winter and spring weather which has not been favorable to mite growth and spread has minimized chances of wheat streak mosaic infection.

"During the spring and early summer of 1959 there were few beating rains or hail storms to shatter wheat and start volunteer wheat. Weather during the 1959 harvest period was ideal throughout the state and harvest was completed in a very short time. Very little early volunteer wheat could be found.

"Late summer and fall surveys for the mite showed them in be in very low numbers. An area bordered on the north by Norton, Phillips and Smith counties and running southward to a point in northwest Rice County had a mild infestation of mites late in the fall. In this area volunteer wheat that had become established late in the summer was quite uniformly infested with wheat mites. The plants were very green and succulent, however, and the mites were not migrating upward on the plants where they could be blown to other fields.

"Only in Norton and Rooks Counties were mites found in planted wheat and this was only a trace infestation found in very late fall. In the southwest corner of the state very localized infestations of the mites were found in Hamilton, Stanton, Morton and Finney Counties."

Surveys in the three southern tiers of counties in the past two weeks give pea aphid counts from less than 1 per sq. ft. to 50 per sweep of insect net in alfalfa about four inches high.

Spotted alfalfa aphids were found only on alfalfa on roadside embankments in Pratt, Barber and Harper counties and in one alfalfa field with southern exposure in Barber County. Counts were less than one per sweep.

No greenbugs were found in the southern tiers of counties surveyed during the past two weeks.

A few army cutworms have been found in southwestern wheat and alfalfa fields. Counts have been less than one per square foot with no visible damage to plants.—Leroy Peters and Dell Gates.

COTTON YIELDS SAY: 'IT WILL PAY TO SPRAY'

PHOENIX, ARIZ.—Al Oshrin, director of the Arizona Cotton Growers Assn., said recently that cotton farmers "harvest as they spray."

Figures compiled by James N. Roney, extension entomologist of the University of Arizona, show that high yields come in years of heavy insecticide use, he pointed out.

The all-time record of 1,108 lb. cotton to the acre was set for Arizona in 1956 when farmers put on an average of 84 lb. insecticide to the acre, Dr. Roney noted.

The next year, farmers cut down on their sprays to 59 lb., and the yield dropped to 1,037 lb.

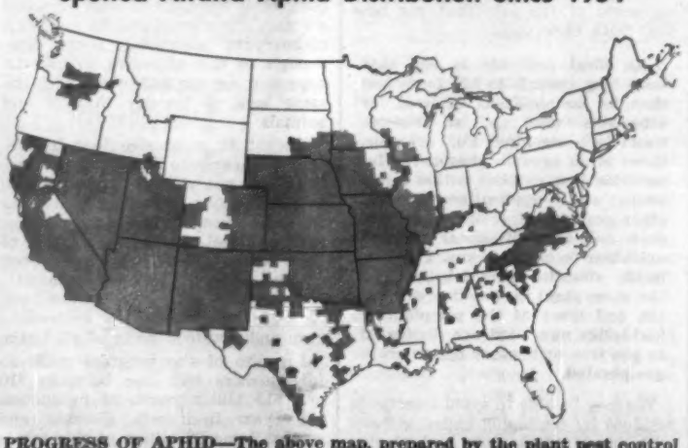
The following year they tried to save even more money and put on only 57 lb. to the acre. They harvested only 970 lb. of cotton.

In 1959 they applied even less insecticides and the yield dropped as low as 900 lb.

The first enemies of the cotton are thrips and aphids which come along from the moment the first seedlings poke their heads up through the soil. Not long after this the black fleahopper and the common fleahopper attack. Then about July 1 the most destructive of all, the lygus bug, arrives.

Dr. Roney said a common mistake of the farmer is to hold his fire until he sees the bollworms so they can shoot everything at once. By this time, the farmer has been eaten out of part of house and home.

Spotted Alfalfa Aphid Distribution Since 1954



PROGRESS OF APHID—The above map, prepared by the plant pest control division, Agricultural Research Service, USDA, shows general distribution of spotted alfalfa aphid since 1954. In the past six years, the pest has made considerable progress, damaging alfalfa in a number of states, particularly in the West. In the Southern portion of the country, infestations were generally light on alfalfa in 1959. However, the pest was collected on white sweetclover at Tampa, Hillsborough County, Florida, last year. The species had not previously been reported outside the Gainesville area of Florida.

California Forests Hit Heavily By Insects

SACRAMENTO — California forests are suffering their worst insect losses since 1932, according to Knox Marshall, forest engineer for the Western Pine Assn.

In a talk before the Sacramento Valley Council of the California State Chamber of Commerce, Mr. Marshall said that entomologists have estimated that approximately 2,000,000,000 board feet of commercial timber will be killed by insects this year.

This represents, he said, approximately one third of the state's 6,000,000,000 board feet annual cut.

Mr. Marshall said insects are a serious problem on nearly 2,000,000 acres of California's commercial timberland. Insect epidemics in forests, he said, have been increased by the long dry spell which started in 1958.

"This unusually long dry period," he said, "not only weakens tree resistance to insects but provides the weather for reproduction of extra generations of insects. In some places, bark beetles have produced three generations instead of the usual one or two."

Mr. Marshall said many owners of timberland already have instituted proper salvage and spraying programs. He stressed that a concerted effort by government, the public and affected landowners is necessary to counter the insect menace effectively.

Indiana's 1960 Insect Development Called 'Static'

VINCENNES, IND.—Insect development in Indiana during April 5-11 can best be described as static. Peach jarring records from five trees on April 11 yielded three tarnished plant bugs in one orchard and one in another. Three stink bugs were jarred from five trees in one orchard (first recorded this season).

No plum curculio adults have been jarred from peach trees to date. Control measures will be needed for plant bugs during the bloom period. Plum curculio injury has been light in all commercial orchards in the area during the past three years so that protection against this species will not be warranted prior to the petal fall period.

Deputy Administrator Defends FDA Action at Entomological Meeting

MILWAUKEE, WIS.—The federal Food & Drug Administration's actions in withdrawing cranberries and hormone-treated caponettes from markets were not whimsical acts, but matters of law and duty, John L. Harvey, deputy administrator of the FDA, said here recently.

Mr. Harvey told a meeting of the North Central Section, Entomological Society of America, that the FDA considers a zero tolerance necessary if a food residue or additive of any strength produces cancer in test animals. He also explained the functions of the FDA and the U.S. Department of Agriculture in approving or banning agricultural chemicals.

"Functions of the USDA are to clear the use of chemicals for the safety of farm operators and processors and to issue certificates of usefulness, with recommendations as to use," Mr. Harvey said.

"Then it is the function of the FDA to determine tolerances, if any. This is a matter of teamwork between the two agencies. It is not true that the USDA poisons the consumers or that the FDA opposes all pesticides."

W. L. Popham, deputy administrator of the USDA's agricultural research service, estimated that modern farming methods make use of 29 million tons of chemical fertilizers a year, plus 500 million pounds of pesticides and 35 million pounds of herbicides.

He asserted that responsibility for making the nation's food supply both adequate and safe stretches through all phases of farm production, through the work of entomologists, processors, research staffs and the manufacturers of chemicals used in agriculture.

The more than 1,000 members of the society's branch were asked in resolutions adopted at the meeting to help detect the presence of any new foreign insect pests brought in on ships using the St. Lawrence Seaway, as well as to help detect any new domestic pest that might threaten agriculture or the public health.

Dr. L. K. Cutkomp, of the University of Minnesota, was elected society branch chairman. He succeeds J. W. Apple, of the University of Wisconsin.

Robert D. Weldon Named As Agrico Manager

NEW YORK — Robert D. Weldon has been named manager, turf and garden fertilizer sales for the American Agricultural Chemical Co., it has been announced by W. J. Turbeville, Jr., vice president in charge of fertilizer sales for Agrico.

Robert D. Weldon

Mr. Weldon has had broad experience in sales and marketing, including several years in the turf and garden field.

Announces Price Advances On Agricultural Potash

LOS ANGELES — The United States Borax & Chemical Corp. on April 11 announced price increases on all agricultural grades of potash, effective July 1, 1960. The price of standard Muriate will be advanced 3¢ per unit K_2O and the price of coarse and granular Muriate will rise by 3½¢ per unit K_2O, the announcement stated. This will represent a price advance of approximately $1.80 per ton of product.

The increases apply to potash delivered on and after July 1, 1960, to domestic customers and to the Potash Export Assn. United States Borax & Chemical Corp. is a member of the Potash Export Assn. and its export tonnage is sold through the association.

The announcement also said the current June price differential will be eliminated in 1961 and that the one per cent cash discount will be discontinued.

DIVIDEND DECLARED

NEW YORK—The board of directors of Witco Chemical Co., Inc., has voted a regular dividend of 25¢ per share, payable on April 14, 1960, to shareholders of record as of March 31, 1960. Witco, together with its affiliated companies, produces and markets carbon blacks, detergents, phthalic anhydride, stearates and a variety of other chemicals for specialty and industrial uses.

Irrigated Barley Responds Better in Demonstration

SAN FRANCISCO — "About 50 growers and fertilizer industry representatives attended the Fresno County Agricultural Extension Service Demonstration of nitrogen and phosphate fertilization of irrigated barley on March 22," said Richard B. Bahme, western regional director of the National Plant Food Institute, who attended the demonstration.

"The irrigated barley showed a better response to nitrogen and phosphate fertilizers in combination, as compared to the nitrogen when used alone," Dr. Bahme said. He continued, "The barley which had not been fertilized with phosphate appeared yellow and stunted, resembling what has been thought to be lack of nitrogen; however, all plots had been treated with 80 lb. of nitrogen."

Bill Fischer, farm advisor for Fresno County, conducted the demonstration.

Dr. Bahme pointed out that the University of California Agricultural Extension Service is conducting about twelve demonstration trials on both irrigated and non-irrigated grains, excluding rice, throughout California this year.

Industry Agronomists Eligible as ASA Fellows

LAFAYETTE, IND. — Everyone in the fertilizer industry who is a member of the American Society of Agronomy is eligible for nomination as a Fellow in the Society, according to J. B. Peterson, chairman of the ASA committee on nomination of fellows.

Instructions for such nominations will be furnished by L. G. Monthey, executive secretary of the ASA, 2702 Monroe St., Madison, Wis.

Saga of Insect Control

Fig. 1.

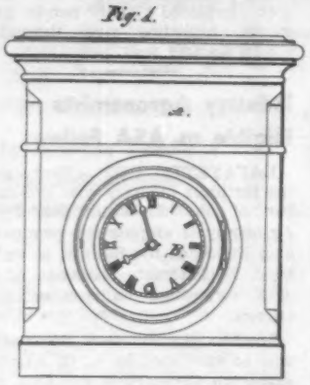
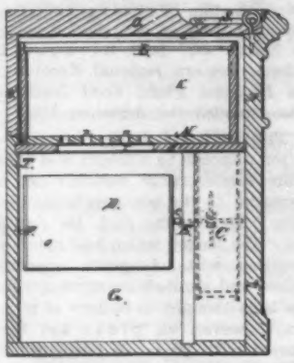


Fig. 2.



THE IDEA of a combined insect trap and clock enabled one Charles Kallmann of Newburg, N.Y., to get a patent on it back in April, 1869. The invention, ingenious for its time, used the clock spring for its motive power, and probably was responsible for the demise of many insect pests.

According to the description given by the U.S. Patent office of this invention (Patent No. 88,718), the device comprised essentially two parts: the clock and a small cylinder (D). The cylinder was covered with cloth which was in turn saturated with a solution of sugar or molasses in water, to entice flies and mosquitoes to land on the drum for a snack, and then slowly carry the unwary bugs to their doom. A rod stretched across the rotating drum brushed off the pests into a dark box which had holes at the top where some light came through. Attracted by the light, the insects would fly through the holes into the upper box where they were captured and later destroyed.

"The whole apparatus has only the appearance of a clock, but it keeps the drum of the trap constantly revolving, as regular as the clock itself is going . . . by practical trials, it is confirmed that it has no influence on the regular motion of the clock," the inventor wrote in his patent.

WORMY APPLES

(Continued from page 3)

chemicals on the animals or in the feed they consume. This is important not only from the standpoint of residues in the products but also from the standpoint of long-term effects on the animals themselves.

We need to characterize the qualitative and quantitative carcinogenic responses of different animal species under specific conditions with respect to genetic constitution, hormonal balance, and various stress factors, so that we may establish completely reliable estimates for safe levels of possible carcinogenic materials occurring naturally and as synthetic additives or residues in feeds.

We also need to expand palatability testing of foods exposed to pesticides or other chemicals and develop more completely objective methods of evaluating flavor, texture, color, and other characteristics that may be altered as a result of chemical treatment.

The development of more effective pest-control methods—whether they involve chemical or biological means or a combination approach—calls for more intensive research on the pests themselves. We need much more knowledge of their life cycles and reproduction, their nutritional needs, and their physiological responses to various environmental conditions. The more we learn about the insect, weed, or disease we're trying to control, the easier it will be to develop chemicals and attractants, natural enemies such as parasites, predators, and pathogens, or other methods that will control the pest without danger to wildlife, crops, animals, or man.

As our standards of living continue to rise . . . as research reveals new knowledge about the relationships of pests to disease and health . . . as industry provides us with the means for greater comfort and well-being . . . we will demand greater freedom from pests of all kinds. Consumers will demand higher quality farm products, free from pest damage and contamination. Farmers, processors, and marketers will demand the tools to furnish these higher quality, pest-free products. People everywhere will demand freedom from the nuisance, the discomfort, and the hazards to health that are associated with insects and other pests.

To meet these demands certainly calls for more research. And for this research to be fully effective, it must have the support of a public opinion that is fully informed as to the part chemicals can safely play in food production.

Drops Westvaco Name Of FMC Division

NEW YORK — Effective April 1, Food Machinery and Chemical Corp. has dropped the name "Westvaco" from its divisional and brand identifications. The former Westvaco divisions will in future be known as the "Chlor-Alkali and Mineral Products" divisions of the corporation.

Westvaco Chlor-Alkali Division is a major producer of caustic soda, chlorine, soda ash and solvents. Westvaco Mineral Products Division is a fully-integrated manufacturer of phosphates, barium products and magnesias. These chemicals and all other products of the two divisions formerly identified with the Westvaco name will in the future be known as FMC Chemicals.

FORMER DEALER DIES

CAMPBELLSVILLE, KY. — John H. Miller, 76, retired farmer and fertilizer dealer and for many years vice president of the Taylor National Bank here, died recently at his home in Campbellsville.

CARCINOGENS

(Continued from page 1)

consuming public that the food it eats is wholesome and safe and doing all that is possible to maintain this safety standard by using agricultural chemicals properly.

What to Tell Consumer

What should Mrs. Consumer be told to help straighten out the distorted view she may have of food chemicals?

Dr. Frederick N. Andrews, Purdue animal scientist, produced many of the answers to this question in a talk on "Man and the Elements—Helpful and Harmful." He pointed out that chemicals are neither all good nor all bad, and we must learn how to live with them.

He explained that all matter is composed of one or more of the 102 known elements. Many elements, Dr. Andrews noted, are extremely dangerous to living things and must be handled with care. But, on the other hand, certain amounts of some of these elements are essential to life.

Here are two of Dr. Andrews' many examples of how a natural element can be both helpful and harmful:

Man likes to play in the sun. Sunlight enables man and animal to synthesize vitamin D. Yet, he points out, persons who are forced to live in the sun fear its effects. And it has been proved that prolonged exposure to sunlight is closely related to the development of skin cancer.

Dr. Andrews noted that while the general public was being frightened by the news that cranberries might be contaminated by "a dangerous cancer-producing chemical"—aminotriazole—some of the world's thyroid specialists were calmly using it in human patients for the treatment of thyroid disorders.

"Arsenic is one of the oldest of insect killers and an element we have included in pure food legislation for a very long time. . . . But how many connoisseurs of seafood realize that oysters contain 5-10 ppm. of arsenic, mussels 120 ppm. and shrimp and lobster up to 170 ppm.?" Dr. Andrews said.

Misunderstanding

D. M. Doty, associate director, research and education, American Meat Institute Foundation, said the existence of chemical residues in foods is frequently misunderstood by "most of our population—even by many of our scientific, medical and political leaders," and it is, therefore, important that "the residue problem be defined in an objective, scientific manner, and not in the emotional atmosphere of fear induced by spectacular newspaper reports and scare books and magazine articles."

Mr. Doty said the difficulties that have led to the residue problem as it exists today may be classified as follows:

"1. Frequently, the directions for use and the dangers in the use of some of the newer insecticides, pesticides, fungicides and food additives that have not been clearly and carefully explained to the potential user. . . . The label must carry these directions, but frequently the importance of these directions is not emphasized completely or elaborated carefully.

"2. In many cases, while adequate testing methods are usually developed with the development of the material in question, these methods are sometimes not as sensitive and not as precise as we would like them to be.

"3. Frequently, the material occurs in unusual situations. This may be exemplified by the fact that sweet corn which has been sprayed with an insecticide for the control of corn ear worm normally would not contain residues of the insecticide in excess of those established by the legal tolerance. . . .

"4. The legal tolerances which have been established for the residue in foods or feeds may have been completely unrealistic. This, of course, has nothing to do with the physiological tolerances, but only with the legal tolerances. From a scientific viewpoint, one should clearly differentiate these residue tolerance levels. The physiological tolerance may be quite high, but the legal tolerance, under existing laws, may be set at a very low level."

Relative to some of the developments which have resulted from the non-scientific, emotional attitude toward residues in food, Mr. Doty said the person who is afraid to eat certain foods because of recent "scares" might be driven into the arms of the food faddist, with the consequent malnutrition which must inevitably result from the use of a restricted, inadequate diet.

"In the long run, failure to eat wholesome, nutritious foods may ultimately lead to greater harm to our population as a whole than will the possibility of consuming small amounts of undesirable residues," he said.

Mr. Doty said also that "the unusual and unrealistic requirements that have been set up to test the safety of many food and feed additives and other agricultural chemicals have completely discouraged the technological research which is necessary to our continued national well-being."

What can be done to help solve these residue restriction problems? Mr. Doty offered these possible solutions:

"1. We must immediately embark upon a complete educational program that will cover the use of all insecticides, fungicides, food additives and other materials which may now result in food residues.

"2. Residue tolerances must be reasonable and realistic.

"3. We should expand our research in a continuing search for materials that do not leave residues in any hazardous levels in the foodstuffs with which they may come in contact.

"4. If all persons connected with the agricultural industry would approach this residue problem in an objective manner, leave out the emotionalism and avoid the scare publicity, much can be done to solve the problem of excessive residues and still maintain the public confidence in the wholesomeness and safety of our food supply."

Wrong Connotation

"The Consumer's Concern About Chemicals and Food" was the subject delegated to Hazel K. Stiebeling, director, Institute of Home Economics, USDA, who commented, "Unfortunately, to many persons the term 'chemicals' always connotes something that is poisonous or dangerous, or at best something that is 'unnatural'." She said the scientist knows that some uses of chemicals can be hazardous and consequently knows that safeguards should be erected around those used for food and agricultural purposes.

Miss Stiebeling believes that foods in modern markets meet most of the quality levels which consumers expect. "Chemicals have helped to make this possible," she said.

"But because custom and tradition are of little help in evaluating the many alternative items displayed in today's markets, there is need for a continuing program of information and education for consumers. Producers, processors and the food trade should devise ways of making it clear to consumers that the products on the market meet high standards of wholesomeness, nutritive value and

other qualities, such as flavor, texture and appearance."

The dependence of the consumer on agricultural chemicals was emphasized by Byron T. Shaw, administrator, Agricultural Research Service, USDA. "Consumers have only two choices," he said. "They can eat wormy apples, or they can accept the use of chemicals."

Dr. Shaw suggested that research can help solve the residue situation by: (1) Developing new chemicals and improved methods of application which are "above suspicion" on grounds of safety and (2) developing non-chemical methods for doing some of the jobs that are now done with chemicals.

He qualified his second suggestion by saying, "I want to emphasize that in proposing research to develop new chemicals, I do not mean to imply that we should abandon those now in use. As we move ahead in research and education, I feel certain that many of the chemicals now being questioned will be given a clean bill of health. However, we all recognize the need for more efficient ways of controlling crop and livestock pests of all kinds.

"Doubts are being expressed about some chemicals, especially those that appear to cause cancer when fed experimentally in large quantities to certain species of animals. Because of the fear of potential carcinogens, the public tends to question the safety of any chemical residue in food," Dr. Shaw stated.

"As a result, we may find that tolerances now set for various chemical residues in raw agricultural products will be removed—that no residues at all will be permitted, no matter how harmless. We may find that use of certain chemicals will be banned, even though they do not leave a detectable residue."

Whose Responsibility?

The difficulty encountered in attempting to draw a line between the responsibility of the government and the responsibility of the food producer and the industries which serve him in assuring a safe food supply was demonstrated by government officials and an officer of a national farm group.

"One of the most serious questions facing farmers is whether the use of agricultural chemicals will be left largely in their hands or whether we are to have more government control and regulation of agricultural chemicals and drugs," said Roger Fleming, secretary, American Farm Bureau Federation.

"Safe use of agricultural chemicals and drugs and reasonable administration of necessary laws in this field are the twin goals of farmers and all other members of the food industry team," Mr. Fleming said. He said misuse of agricultural chemicals "will only result in more government regulations and control."

He criticized the government for "enforcement by press conference." He said the role of the federal government in enforcing agricultural chemical regulations "should be that of the police officer, not the town crier."

Ervin L. Peterson, assistant secretary of agriculture, talking about the government's function in assuring a safe food supply, said, "Too often problems are met with a 'there-ought-to-be-a-law' approach. It is surprising that so many segments of the private enterprise community so often look to governmental action as a means to overcoming competitive problems."

He said the road to Utopia, by government regulation, looks both inviting and easy. "It is that," he said. "But it is also something else. It is the way to escape responsibility. 'You tell us what to do and we'll do it,' reflects an attitude seeking such escape."

Mr. Peterson asked, "What is government's function in assuring a safe food supply?

"Categorically, responsibility for food safety resides at every point in the food chain from, and including, producers to consumers. That responsibility is moral, economic and legal. . . . Legal actions to compel a safe food supply are by themselves incapable of assuring safety."

Mr. Peterson observed that the economic incentives to provide safe foods are "certainly greater than the legal restraints upon processes, procedures or actions which have been determined to jeopardize their safety." He said he believed that the morality of citizens engaged in the private competitive enterprise system "is at least equal to that of those engaged in applying the force of government to that system."

After illustrating that food safety is a complex of many things—including cleanliness, absence of economic fraud, truthfulness—Mr. Peterson observed that government's role in food safety "is supplemental to and not in substitution for moral and economic factors."

"Government should, and does, exercise a surveillance over the food industry to identify actual or potential hazards, inform the industry of them, and, where necessary, act to prevent their occurrence."

Safeguards

George T. Daughters, director, Detroit (Mich.) district of the Food and Drug Administration, said safeguards must be observed when toxic materials are allowed to be used in the production of meat, milk and eggs. These safeguards include: Producers administering the chemicals properly; enforcement agencies using practical analytical procedure for determining whether the finished food on the market contains excessive residues and using adequate facilities to enforce the rules permitting the use of toxic chemicals.

"Rules that specify safe conditions for using toxic materials do not by themselves safeguard public health," Mr. Daughters noted. "You don't insure driving within safe speed limits simply by establishing the speed limits."

SOIL SAMPLE PROJECT BACKFIRES

OTTAWA—An enterprising Toronto high school student, with the intention of entering a "science fair," sponsored by Rotary International, sent a letter and a vial to the departments of agriculture in each of about 70 countries, requesting that the vial be filled with soil from the local area and returned to him.

He received immediate replies from Tokyo and London, both advising him that although they would be pleased to oblige, soil from their countries was prohibited entry to Canada under regulations administered by the plant protection division, Canada Department of Agriculture. A division official visited the youthful importer to explain the regulations and to obtain any samples which may have escaped detection of the postal customs.

Samples from Eire, Spain, Philippines, Greece, Hawaii, Iceland, Denmark, and Switzerland were confiscated with the full cooperation of the student and turned over to nematologists for examination, principally as a matter of interest.

Parasitic nematodes were found in some samples.

Allied Chemical Names New Salesman

NEW YORK—Richard L. Nelson has been appointed a sales representative for Allied Chemical's Nitrogen Division.

Richard L. Nelson

A native of Lincoln, Neb., he will supervise the northern Illinois sales territory of Nitrogen Division.

Mr. Nelson holds a bachelor and master's degree in science from the University of Nebraska, and resides at 812 North Ottawa Avenue, Dixon, Ill.

FMC Names New Territory Coordinator

NEW YORK—Food Machinery & Chemical Corp. has named D. Stewart Quern to the newly created post of senior sales coordinator in the southern territory for FMC's Chemical Divisions. Mr. Quern was previously southern sales manager of the Becco Chemical Division of the corporation.

In his new position, Mr. Quern will work with all five chemical divisions of FMC to coordinate their contacts with customers and to expand sales of FMC chemicals.

Mr. Quern joined Becco in 1928 as a technical representative in the sales service department, and became southern sales manager in 1943.

4-State Aerial Applicators Conference Set for October

YAKIMA, WASH.—Norkem Corp., of Yakima, has announced its Second Annual 4-State Aerial Applicators Conference to be held in Yakima Oct. 10 and 11. Headquarters for the conference will be the Hotel Chinook.

Cooperating with Norkem will be the Washington State Aeronautics Commission, Washington State University and the Washington State Aviation Assn.

Aerial applicators and interested personnel from the states of Oregon, Washington, Idaho and Montana are being invited to the conference and, in addition, the entire affair is open to the public, or those interested in chemical problems and agriculture in general.

At last year's meeting, over 230 people were in attendance from all four states.

Files Statement

NEW YORK—St. Regis Paper Co. has filed with the Securities and Exchange Commission a registration statement relative to the issuance of St. Regis common stock to be offered in exchange for the outstanding shares of the capital stock of Central Waxed Paper Company of Chicago, Ill. The proposed offer would provide that if the exchange is declared effective, a maximum of 112,875 shares of St. Regis common stock would be issued on the basis of eight thousand two hundred nine ten thousandths (.8209) of one share of St. Regis common stock for each share of capital stock of Central.

SPECIAL MERCHANDISING SECTION

BETTER SELLING

MARKETING NEWS AND FEATURES

How Well Informed Are Southern Farmers On Up-to-Date Soil Fertility Practices?

By RALPH L. WEHUNT[1]
Agriculturalist—Soil Fertility
Tennessee Valley Authority

How well informed are our southern farmers on up-to-date fertility practices? This is a subject that has stirred our thinking mechanism for many years. The recent National Plant Food Institute survey focused new attention on the question. Many of us were jolted out of our complacency by its findings. Other surveys, which have substantiated the NPFI study, have done little to set our minds at ease. All of these surveys[2] indicate that we haven't been effective in bringing fertilizer research to farmers. For some reason it appears farmers do not understand our educational messages, or at least do not act on the information they receive.

Other people looking at our programs also suggest that our accomplishments haven't been too successful. A statement made by Dr. Jesse W. Markham in his recent book, "The Fertilizer Industry—Study of An Imperfect Market," is an example. According to Dr. Markham, our past efforts have not satisfactorily solved the problem of imperfect fertilizer knowledge because "fertilizer programs have lacked coordination; their objectives have not been clearly defined; and channels for communicating knowledge have been ineffective."

However, before we become too downcast and gloomy, let's point out that we have made progress. For example, from 1940 to 1958, nitrogen consumption in the southern states increased 249%, phosphate 70%, and potash 253%.[3] Increased per-acre-yield of crops has also taken place. Higher analysis fertilizers are rapidly taking the place of low analysis across the southland. There was a 25% increase, for example, in the average analysis of mixed fertilizers used in the 13 southern states during the eight-year period, 1950-1958. In 1950 the average analysis was 20.7%. In 1958 it was 25.9%.[4] These are but a few of our accomplishments. Other achievements of equal importance could be mentioned if we had the time.

The main question before us today is, I believe—not have we made progress, but are we progressing fast enough for the farmer, the fertilizer industry, and the general public to reap the full economic harvest of fertilizer research findings? And, if not, what can we learn from the surveys to help speed up our programs? Our ancestors could reasonably regard change as a function of lapsed time, the passing of a generation. But more changes take place in a single generation today than in the duration of entire historical dynasties in days past. Let's take one statistic as an example of the rapid change. Nearly two million people (net) left the U.S. farm population in one year recently—a drop of 10% in only 12 months.[5]

In fact, agriculture is moving so fast it is difficult for our perceptions to catch up with the explosion. However, the need to change our thinking to meet the explosion taking place becomes apparent when we examine the importance of fertilizer in southern agriculture. In 1957, for example, southern farmers spent about $523 million of their hard-earned money for fertilizer and lime. This represented over 11% of their total operating cost, or about 7% of their total farm receipts.[5]

Are we progressing fast enough? I don't believe we are, but your opinions may differ from mine. So, let's examine some of the facts and survey information to see where we are.

Fact number one—despite constant urging by the public agencies and the industry, most farmers in the southeast are using less than half the fertilizer needed to meet college recommendations.

Fact number two—despite our acute soil acidity problem in the South, we still haven't developed an effective lime program to overcome the situation.

Fact number three—use of low-analysis fertilizers is still a common practice on many southern farms. Also, many farmers are using the "wrong kind" or ratio of fertilizer to obtain a proper nutritional balance of their crops.

These three facts are revealing enough, but let's dig deeper. Let's go to the "grass roots" level. Let's see what farmers think about our programs. Are they listening to us? Are they reading our bulletins? Are they seeing our demonstrations? Let's take soil testing as our first example. We seem to have convinced southern farmers that soil testing is a good thing. Most farmers who have their soils tested follow the recommendations completely or in part. But "conviction" and "doing something about it" are two different things. Only about 50% of southern farmers have ever tested their soils. The total number of soil tests made each year in the South represent only a very small percentage of the total cropland. In fact, we have only scratched the surface in soil testing.

Southern farmers have a strong urge to "see" before they "believe" the benefits of fertilization. For this reason, farmers approve of fertilizer demonstrations and seem to feel they are helpful. But here again, we haven't been too successful. According to surveys, only a few southern farmers have ever visited a demonstration plot. Moreover, those that did visit one tended not to remember what was being demonstrated. Could this be the reason so many "demonstrate" on their own?

Many southern farmers use the "trial-and-error" method of testing

(Turn to INFORMED, page 18)

[1]Paper presented before the Agronomy-Education Division at the Southern Agricultural Workers' meeting, Birmingham, Ala., Feb. 2, 1960.

[2]Survey information was obtained from: "A Study of Farmers' Attitudes Toward the Use of Fertilizer," for the National Plant Food Institute by National Analysts, Inc., Fall 1957; "Farmers' Attitudes, Knowledge and Use of Fertilizer," by Roger C. Woodworth, University of Georgia; and "Study of Fertilizer Use Factors," by S. H. Yeager and O. D. Belcher, Alabama Polytechnic Institute.

[3]"Fertilizer Summary Data by States and Geographic Areas," September, 1958, Division of Agricultural Relations, Tennessee Valley Authority.

[4]Compiled from: "Consumption of Commercial Fertilizers and Primary Plant Nutrients in the United States," Agricultural Research Service, USDA, 1950 and 1958 Fiscal Years.

[5]USDA, "Farm Population Estimates for 1957," February, 1958, Table 2.

A SLIDING DOOR in the center of the building connects with the warehouse at the Stallings Seed & Feed Co., Nashville, Ga. L. R. Stallings, manager, displays very little feed and fertilizer on the floor of the store. When sales are made they are taken from the 20,000 sq. ft. warehouse.

'Politic' With Farmers to Build Fertilizer Sales, Says Dealer

By Robert H. Brown
Croplife Special Writer

The way to the White House, said former President Truman in a recent speech to Democrats, is through the precinct level and the way to fertilizer sales is to get out and "politic" with farmers, says L. R. Stallings, of the Stallings Seed & Feed Co., Nashville, Ga.

"Selling fertilizer is no different from soliciting votes. You've got to get out and mingle with the farmers and 'politic' with them. The day is past when a merchant can rely on customers coming to the store to spend sums as large as they spend for fertilizer," he added.

In one day, Mr. Stallings thinks nothing of calling on 27 farmers. He's an ex-salesman on the road and he knows the value of those personal contacts.

Add to these personal calls, the obtaining of soil samples taken on the personal calls and that is the recipe for building up a good fertilizer business, he says.

"I can take 500 soil tests and sell more fertilizer than anyway I know," he added.

For the past three years, Mr. Stallings has been devoting more and more time to the business of selling fertilizer because he believes it is the coming business in the agricultural field. He plans to devote even more time to it now that he has moved his business into a larger space on U.S. Highway 129 just south of town.

"We're going to devote more time and effort to the sale of heavy merchandise such as fertilizer now that we have more space. We're getting into the wholesale business, too, since we have been appointed distributor for this area," he said.

Previously located in the heart of the city, he has taken his new location which gives him 20,000 sq. ft. of floor space and ample warehousing facilities.

The location is a former tobacco warehouse made of galvanized metal.

In the front of the warehouse he has put his office and salesroom in a modern front constructed of concrete

(Turn to POLITICING, page 17)

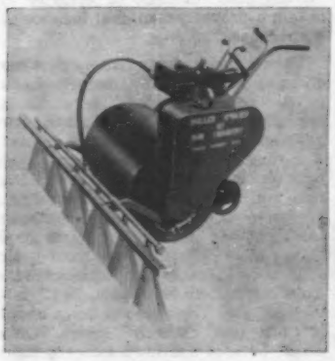
WHAT'S NEW

IN PRODUCTS · SERVICES · LITERATURE

To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6049—Power Sprayer

A self-propelled power sprayer that applies a consistently even spray pattern aided by nozzles spaced 12 in. apart, has been announced by Sun Industry, Inc. The uses include lawn



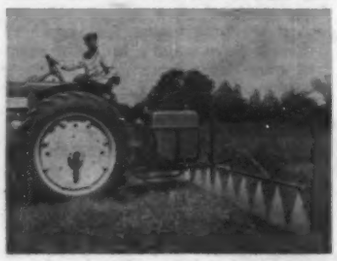
weeding, tree spraying, fertilizing, power lawn rolling and general spraying for small orchards. The power driven, 30 gal. roller drum contains the spraying material and acts like a huge wheel transporting the fluid with a minimum of compaction, the company says. Baffling within the drum provides a concrete mixer type of agitation. A 6 ft. boom is recommended for easy maneuvering around trees and shrubbery, but booms up to 13 ft. are available. The pump has a 5 gal. per minute capacity at 150 lb. pressure. For complete information, check No. 6049 on the coupon and mail.

No. 6048—Selective Weed Killer

"Butoxone," a selective weed killer designed to control many broadleaf weeds in alfalfa, red clover, birdsfoot trefoil, alsike and ladino clovers, has been announced by Chipman Chemical Co., Inc. The product contains 2,4-DB and, according to company literature, tests and recent commercial use have proved its weed killing effectiveness without effect on the specified crop. It is a liquid and is applied as a spray in either the seedling or established legumes grown for seed. Complete information can be secured by checking No. 6048 on the coupon and mailing to this publication.

No. 6052—Tractor Mounted Sprayer

Hanson Equipment Co. announces a "Trak-Pak" sprayer unit that mounts on any standard three-point



hydraulic hitch. The unit can be equipped with either a boom or "Brodjet" sprayer. It is available with a choice of piston-type or nylon-roller-type pumps. Chemical particles are kept in suspension by a propeller-type mechanical agitator. A universal joint drive shaft from the tractor PTO powers the pump-agitator assembly. The 100 gal. fiberglass tank is completely inert to all agricultural chemicals and will not rust or corrode, the company says. A 14 in. top opening provides access to the tank interior. Chemical level is always visible on the gallonage gauge molded into the translucent tank wall. For complete information, check No. 6052 on the coupon and mail.

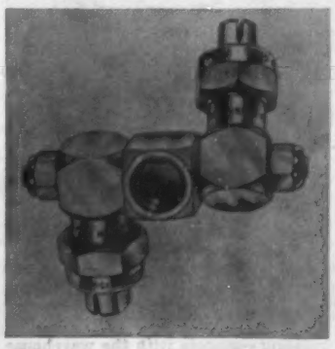
No. 6050—Spraying Gauge

A gauge, with direct reading in "gallons per acre" and designed to be mounted on crop spraying units, usually directly behind the tractor or jeep driver, has been announced by Mayrath, Inc. The gauge is for use with either 5 gal. or 8 gal. tips spaced 20 in. apart and gives gallons per acre of insecticide or weed killer being sprayed at speeds of three, four or five miles an hour, the company says. The gauge also shows pounds per square inch pressure, however, in

case the operator wants to use conventional charts. For more information, check No. 6050 on the coupon and mail.

No. 6051—Spray Nozzle

Delavan Manufacturing Co. has announced the development of a new spray nozzle. Called the Delavan BX, the tips are designed to offer addi-



tional coverage for spray booms at flow rates consistent with standard boom nozzles. They are available from 5 GPA through 10 GPA. Manufactured as both single and double nozzle, the BX offers additional coverage ranging from 68 in. to 104 in. for single nozzles and from 153 in. to 194 in. for double nozzles when both are placed at 30 in. boom height, the company says. The single nozzle can be used for boom extensions or roadside spraying. A swivel nozzle mounting is recommended for easier adjustments. The double nozzles are well suited for small broadcast sprayers. For more information, check No. 6051 on the coupon and mail.

Also Available

The following items have appeared in previous issues of Croplife. They are reprinted to help keep dealers on the regional circulation plan informed of "What's New."

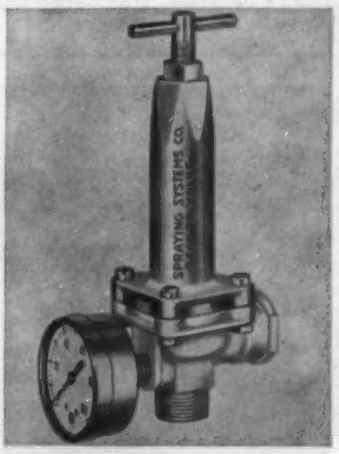
No. 6037—6-Row Boom Kit

A six-row boom kit (Model 640-E) has been introduced by Hahn, Inc. The boom is specially designed for application of liquid fertilizers and features an aluminized-steel boom

pipe, the company says. The three-section design covers full six rows. It can be used with all Hahn trailers, Hahn tractor-mounted sprayers and other type tractor sprayers, the company says. For details, check No. 6037 on the coupon and mail.

No. 6038—Pressure Relief Valve

A pressure relief valve for use on farm sprayers, has been introduced by Spraying Systems Co. The liquid-contact face of the valve is a special corrosion resistant diaphragm that results in responsive, chatter-free pressure control, the company says. Supporting the setting of the diaphragm is a dual stainless steel spring



assembly, consisting of a light spring for the lower pressure range and a heavy spring for the high pressure range. All parts of the valve that come in contact with chemicals are made of nylon and stainless steel, the company says. For details, check No. 6038 on the coupon and mail.

No. 6044—Fertilizer Unit

International Harvester Co. has introduced a fertilizer unit, which it says will enable once-over planting immediately after plowing through the use of a wide packer wheel that compacts soil ahead of the planter

Send me information on the items marked:

- ☐ No. 6037—6-Row Boom Kit
- ☐ No. 6038—Pressure Relief Valve
- ☐ No. 6039—Bulk Fertilizer Booklet
- ☐ No. 6040—Insecticide Guide
- ☐ No. 6042—Fertilizer and Dispenser
- ☐ No. 6043—Nitrogen Analyzer
- ☐ No. 6044—Fertilizer Unit
- ☐ No. 6045—pH Meter
- ☐ No. 6046—Bulk Material Hauler
- ☐ No. 6048—Selective Weed Killer
- ☐ No. 6049—Power Sprayer
- ☐ No. 6050—Spraying Gauge
- ☐ No. 6051—Spray Nozzle
- ☐ No. 6052—Tractor Mounted Sprayer

(PLEASE PRINT OR TYPE) COUPON NOT VALID AFTER 60 DAYS

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

furrow opener. For use with the McCormick No. 185 beet or bean planter, the unit eliminates seedbed preparations and saves time, labor and fuel, the company says. The unit mounts on a tool bar ahead of the

planting unit and features a 115 lb. fertilizer hopper. In addition to compacting soil over the fertilizer, the packer wheel also provides a firm bed for seed deposited at uniform depth by the planter furrow opener. A contour press wheel, behind the planter, firms soil over and around the seed while the center ridge applies additional pressure directly over it. For details, check No. 6044 on the coupon and mail.

No. 6046—Bulk Material Hauler

The model "C" bulk material hauler has been introduced by Highway Equipment Co. The unit, according to company literature, can be used for transporting virtually all materials of fine granular consistency, such as

flake gypsum, salt, pulverized lime and superphosphate. Four different body lengths are available including 8 ft., 11 ft., 13 ft. and 15 ft. A 30 in. heavy duty, four-ply rubber belt-over-chain conveyor is utilized. The screw-jack allows precision setting of the feedgate, the company says. For details, check No. 6046 on the coupon and mail.

No. 6039—Bulk Fertilizer Booklet

"Your Land Is Different," a booklet on modern bulk fertilization, is being made available by Highway Equipment Co. The booklet, according to the company, contains timely, money-saving tips on such farm problems as restoring plant foods, soil testing, liming, proper application of fertilizer and effective spreading patterns. In addition, the booklet notes bulk spreading methods as well as modern commercial bulk spreading equipment. For copies, check No. 6039 on the coupon and mail.

No. 6042—Fertilizer and Dispenser

Leon's Horticulture Specialties Corp. announces the availability of a unit which allows the user to water and fertilize his lawn at the same

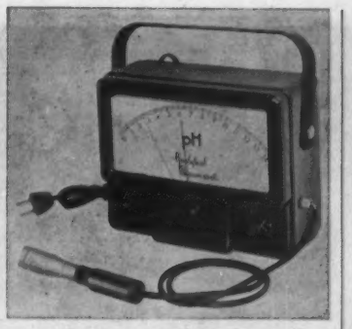
time. According to the company, the dispenser uniformly dispenses the correct amount of fertilizer in liquid form. The dispenser is non-breakable and rust proof. The unit is operated by placing a "Vita-Brick" fertilizer formula in the dispenser, attaching it to the hose and spraying the lawn. A chart for selecting the correct formula for plants and area to be covered is included. For details, check No. 6042 on the coupon and mail.

No. 6040—Insecticide Guide

A compact guide for users of Thiodan insecticide, a spray-dust material designed for control of a wide range of insects on a variety of crops, has been released by the Niagara Chemical division of Food Machinery & Chemical Corp. The guide features an easy-to-read chart on how to use the product, the company says, plus suggested amounts for control of specific pests, time of application and other pertinent data on individual crops. For copies of the guide, check No. 6040 on the coupon and mail.

No. 6045—pH Meter

Analytical Measurements, Inc., announces the model 700 "Big Scale pH Meter," which is designed to read pH



values within .02 pH. The 5 lb. unit is portable and can be used wherever a standard 115 volt AC outlet is available. Features include a big scale so that it can be read quickly, a single operating control and a high output electronically modulated amplifier. The polyethylene electrode probe unit permits the user to bring the meter to the sample, the company says. For more information, check No. 6045 on the coupon and mail.

No. 6043—Nitrogen Analyzer

An automatic nitrogen analyzer has been released by Coleman Instruments, Inc. According to company literature, the unit, within its 12 to 15 minute cycle, performs a complete determination of nitrogen content. It will measure nitrogen in an almost unlimited variety of materials, the

company says, including foods, fertilizers and chemicals. For more information about the unit, check No. 6043 on the coupon and mail.

BUYS PROPERTY

TORONTO, ONT.—Swift Canadian has purchased property near Thamesville for construction of a new agricultural chemical plant.

HOW LION E-2* HELPS YOU GET THE

Lion E-2 Ammonium Nitrate has distinct advantages that can make your selling job easier, quicker, and more profitable.

Lion E-2 is the only ammonium nitrate on the market that can save 20 to 25% of your valuable storage space. Because each Lion E-2 prill is physically concentrated, you can stack *five* 80-lb. bags of Lion E-2 in the same space previously taken up by just *four* 80-lb. bags of any other brand. The space you save can be utilized for larger inventories and larger profits.

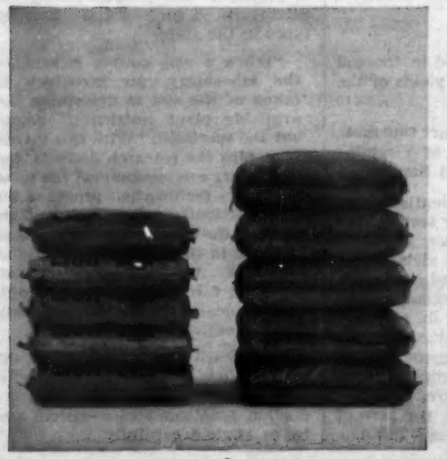
Lion E-2 bags are easier to handle. They're specially "friction-ized" with Monsanto Syton,® a special antislip agent for faster gripping, safer stacking. You can stack Lion E-2 higher without fear of bag damage due to slippage.

Lion E-2 saves your customers time when they need it most. Because Lion E-2 is concentrated, your customers can put up to one-fourth more material in their spreaders. They eliminate at least one out of every five refill stops. Lion E-2 spreads easily, produces the yields that build repeat business for you.

Lion E-2 is going to be seen, heard, and talked about by all of the folks in your county. Unusual advertising (and a lot of it) is going to make your customers "Lion-conscious." They'll recognize Lion E-2 as a dependable product that's guaranteed 33.5% vital nitrogen.

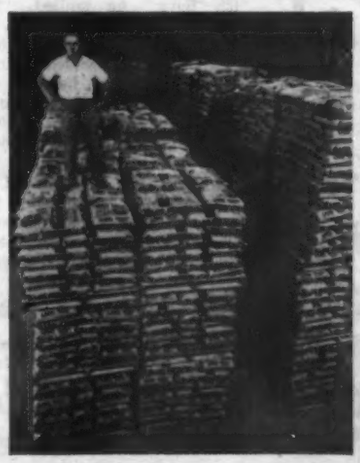
Get set now for the "lion's share" of business. Write LION E-2, Monsanto Chemical Company, St. Louis 66, Missouri.

"LION'S SHARE" OF AMMONIUM NITRATE SALES



Lion E-2 is the only brand that saves 20 to 25% of your storage space. In your warehouse, or on your truck, you can stack *five* bags of Lion E-2 in the same amount of space previously taken up by just *four* bags of any other brand.

You can stack Lion E-2 higher, safer, faster. The bags are specially "frictionized" with Monsanto Syton, the antislip agent that reduces bag damage due to slippage.



OSCAR & PAT

By AL P. NELSON

A stocky, heavy shouldered farmer in cloth jacket, overalls and red checkered cap ambled into the salesroom of the Schoenfeld & McGillicuddy farm store. His ruddy face bore a pleased grin, and in his right hand he carried a copy of the local newspaper.

He made his way to the railed-in office enclosure where stiff backed Oscar Schoenfeld sat at his flat top desk figuring discounts.

"Hey, you!" he called. "I'll take the five bucks."

Oscar's straight back stiffened. Slowly he swung around his eyes as cold as steel. "Ach, what is that?" he asked.

"I said, I'll take the five bucks!" grinned the farmer with a friendliness that could melt the North Pole. He thrust the paper toward Oscar and pointed to the picture of a heavy set man. The picture was taken from the rear, showing only the man's head and neck and shoulders.

Oscar's eyes popped as he noticed that this picture carried a headline, "$5.00 If This Is You!" He also noticed with a mounting rage that the picture was incorporated within the Schoenfeld & McGillicuddy advertisement.

"Well, it's me, ain't it?" asked the farmer whom Oscar recognized as a new farmer in the area. "Ain't nobody else got a bull neck the size of mine. Anyway that's what the old lady says when she gets mad at me."

"I don't know anythink aboudt this!" Oscar blurted forth. "Ach, you will have to talk to that crazy partner of mine, that Pat! This is some more of his work. Always foolink aroundt with everythink else besides sellink fertilizers! Such a partner."

"Well, ain't you a part owner of this firm?" asked the farmer. "I was told that Oscar and Pat owned it. You ain't Irish. I kin see that right now. So you must be Oscar. You can shell out with the five bucks. Come on, I want to take the old lady to a noon day dinner at the Hotel Becker. This five bucks will just cover the cost maybe."

"Ach, I own half of this company, all right," Oscar barked. "But Pat didt not tell me he was goink to do this crazy thing. Such foolishness—five bucks for a picture of somebody. We sell fertilizer, not pictures."

"Huh," growled the farmer. "I don't care what trouble you got with your partner, mister. That ain't no never mind to me. Just shell out with the five bucks like you advertised. You're gonna live up to what your partner says, ain't you?"

At this moment, another stocky farmer entered the salesroom. He was Ab Cooper. Sighting the duo at Oscar's area, Cooper burst forth.

"Hey, Oscar, I came to claim that $5 for my picture in the paper. Talk about easy money. Hi—ya, Manley." He sighted his neighbor. "Don't tell me you're claimin' that $5, too?"

"Why, sure!" retorted Manley quickly. "That's me, sure as Satan made green apples. Who else has got a big neck like I got? Look here." He turned and exposed his neck.

Now it was Cooper's turn to expose his neck and broad shoulders. Pete Manley looked a little confused. "Yeah, you have got a broad neck. Durn that printer. He cut off the picture so all yuh kin see are the shoulders and head and your jacket looks like mine, too. And durn it, yuh got a checkered cap."

"Well," queried Ab Cooper with a grin, "what are we gonna do about it?"

"Where's the other partner?" asked Manley of Oscar.

"Ach, he's chasink aroundt at some farm," Oscar said. "Maybe he won't be back until five o'clock."

"Nuts," said Cooper. "I can't wait around that long. My time is worth $4 an hour. I tell you what—so long as we both look alike on this picture—and so we won't fight, Oscar can give us both a $5 bill!"

Oscar's face went purple. "Ach, no!" he thundered. "Such foolishness. I will make that Pat pay one of you, out of his own pocket."

"I don't care whose pocket it comes out of," grumbled Manley. He surveyed Oscar critically. "This is a heck of a way to treat a customer. You advertise somethin' and then you won't pay up. You must be a bunch of chiselers."

At this moment the door opened and in walked tall, bushy haired Pat McGillicuddy. His cheeks were red from chill and his coat was buttoned tight.

"Hi, boys," he smiled. "What's up?"

In the next five minutes, a tornado of sound and fury swirled around Pat McGillicuddy as he listened to the trouble that had arisen because of the $5 picture award. Oscar, Manley and Cooper all tried to talk at once and the din was deafening.

Finally Pat held up his hand. "Wait a minute, boys. I took that picture with my new twin lens camera. I stood behind Manley after he left the salesroom and snapped the picture."

Manley grinned broadly. "See, it's me, all right. I win the $5."

"You sure do," Pat said. Seeing the stony expression on Oscar's face, he reached into his pocket for his wallet, extracted a five dollar bill and handed it to Manley.

The farmer grinned wider than ever. "Thanks," he said. "That's the way I like to do business, mister." He thought for a moment. "I guess I could use some fertilizer. Might as well buy it here if I can get the right deal."

"Okay," said Pat smiling. "Come into my office and we'll talk about it."

Pat then turned to a disappointed Ab Cooper, who looked as if he was planning to leave. Pat picked up a 25 lb. bag of dog food from a counter. "Ab," he said, "you got dogs, haven't you?"

"Sure," said Ab, "two collies and a water spaniel.'

Pat gave Cooper the bag of dog-food. "I think any contestant who came as close as you did is entitled to a prize, too."

"Thanks, thanks." Cooper cuddled the bulky bag in his arms as if it were a baby. "I kin use this, Pat. Well, I gotta move along now. My time's worth $4 an hour, you know." At the door he halted. "Drop around one of these days, Pat. I'll be needin' some fertilizer, too."

FARM SERVICE DATA

EXTENSION SERVICE REPORTS

Available potash found in most Florida soils is not sufficient for economic production of crops without the addition of fertilizer potash, according to a University of Florida soils assistant.

C. N. Nolan, assistant in soils with the Florida Agricultural Experiment Station, says the total potash in Florida soils will usually range from 300 to 500 lb. per acre in the top 6 in. of soil.

But he adds that about 90% of this material is nonexchangeable and, for all practical purposes, is unavailable for immediate plant use.

Since most Florida soils contain small amounts of clay and organic matter, loss of potash by leaching may be expected under normal conditions. Several factors are important in the leaching process, including moisture movement, crops growing on the soil, liming and heavy rains.

Mr. Nolan says heavy leaching rains totalling three inches or more may occur over a period of less than 48 hours. Under these conditions, much of the fertilizer potash may be leached from the rooting zone of annual crops.

Mr. Nolan says the use of lime in soil management has an important influence on the amount of potash one can add to the soil. The first effect of liming the soil is to reduce the exchangeable potash. It also increases the percentage retention of applied fertilizer potash.

Therefore, it is usually beneficial to lime an acid soil before applying potash fertilizer.

Mr. Nolan emphasizes the point that good soil management practices, such as liming, maintaining cover crops, and wise use of fertilizers, all tend to conserve potash against the leaching of excessive rains.

★

How fertilizer is placed in the soil has a lot to do with the yields of the crop being grown.

New evidence to support this fact is forthcoming in tests at Virginia Agricultural Experiment Station.

Working with wheat, scientists there have found that in every test, except one, placing the fertilizer and seed separately gave higher yields than when the two were applied in contact with each other. For example, the contact placement of 40 lb. per acre of P_2O_5 from 7-14-14 produced 28 bu., and the separate placement of the same amount of the same fertilizer produced 36.3 bu. per acre. The contact placement of 120 lb. per acre of P_2O_5 from 21-54-0 produced 29.7 bu., and the separate placement 35.2 bu. per acre.

The effect of placement of phosphate fertilizer on alfalfa yields also has been studied. Concentrated superphosphate and calcium metaphosphate at rates of 50 and 100 lb. per acre of P_2O_5 were disked in, banded, and topdressed. Results from one location indicate that yields were significantly higher when 50 lb. per acre of P_2O_5 from concentrated superphosphate were banded or disked in than when the same amount was topdressed.

A trend in the same direction was noted with calcium metaphosphate applied at the rate of 50 lb. per acre of P_2O_5, but yield differences were not significant. Yields were similar when 100 lb. per acre of P_2O_5 from concentrated superphosphate were applied by the three methods. However, topdressing 100 lb. per acre of P_2O_5 from calcium metaphosphate gave yields significantly lower than banding.

★

"Fertilizer is one of the largest expenditures in the farming business today," declares Dr. Walter Sowell.

This statement by the Auburn University Extension Service soils specialist concerns the fact that fertilizer costs amount to about $50 million each year. And this is about 20% of the total cash costs of production. "Despite these high figures, fertilizer is still the best buy that the Alabama farmer has," according to Dr. Sowell.

Auburn University has conducted extensive research and established a soil test laboratory to help farmers use fertilizer more efficiently, explains Dr. Sowell. Besides this, the experiment station conducts research to determine the amount and ratios of fertilizer that produce the greatest return on each of the major soil types in the state.

"When a soil sample is sent to the laboratory, an inventory is taken of the soil to determine the available plant nutrients," points out the specialist. "With this inventory, plus the research findings, the laboratory can recommend the most profitable fertilization program for that particular soil and crop. This enables the farmer to make a wise decision in the purchase and use of fertilizer. And the program can help the farmer make more profit, which means a healthier economy for the entire state."

Since cash costs in farming are high, it's too costly to make mistakes. Therefore, urges Dr. Sowell, all production practices and resources need to be studied carefully.

Don't Take Chances On Losing Sales...and Customers... Because You Don't Have Enough Fertilizer On Hand For Farmers Who Need It Quick This Spring

4 Leading Fertilizer Dealers Tell You Why They Still Expect To Make Big Sales Despite The Delayed Spring Selling Season:

When your customers come in for their fertilizer this Spring, they are going to need it in a hurry. Promises or excuses won't do. The last thing they want to hear is, "Sold Out."

With the late Spring season this year, any delay in applying fertilizer will be costly. When farmers' incomes are at stake, they can't afford to wait.

What Are Some Dealers Doing?

Some dealers, of course, have taken a "wait and see" attitude about stocking up. Others just aren't ordering quite as much as they normally would. But both are taking a big chance on losing sales, profits—and even the patronage of the customers they disappoint—by not having the fertilizer on hand when it's needed most.

What Leading Dealers Are Doing:

Other dealers who realize the importance of giving real service to their customers aren't taking such risks. They know that with the short Spring, farmers are busier than ever and can't be kept waiting when they are ready for fertilizer.

These are the dealers who have had the foresight to stock up for a big, profitable selling season. They expect to sell not only their own customers—but the customers of other dealers who are sold out because they didn't order enough fertilizer.

And they are well aware that ammonium nitrate will be in big demand, so they are stocking up big on the brand that is asked for most often—Spencer "Mr. N." Since its introduction, Spencer "Mr. N" has outsold every other brand of ammonium nitrate! Why not sell the biggest seller?

Don't Be Caught Short!

The secret of selling fertilizer in a short selling season is simply to have enough on hand to supply the demand. Here is the way four leading fertilizer dealers put it:

Tommy Veulemans
Syracuse Elevator
Syracuse, Missouri

"I can credit the increase in my fertilizer business to the fact that I have two warehouses full of material when it's needed."

"I keep a warehouse well stocked in advance of the season, and it's conveniently located for farmers to load their trucks."

Howard H. Linn
Linn Grain Company
Neodesha, Kansas

Walt Niecum
Mutual Grain Co.
Servia, Indiana

"We stock a sizeable quantity of several grades, and having it on hand makes a lot of difference to the business."

"Facilities for immediate delivery from my warehouse enable me to get the bulk of the customers who want their fertilizer NOW."

Kermit Streicher
Holgate Grain & Supply Company
Holgate, Ohio

Place Your Order Now!

Take a tip from these leading fertilizer dealers and be well stocked when the Spring rush hits in your area. Why take a chance on losing sales? Remember, this year more farmers than ever will be using extra nitrogen to boost their yields. That's why it will pay you to have plenty of Spencer "Mr. N" Ammonium Nitrate on hand. Place an order with your mixer salesman right away—while there's still time to get delivery for big Spring sales.

"Mr. N" enough to cover 26,000,000 acres of cornland with 60 lbs. of actual N per acre! That's how much has been sold—making "Mr. N" the best selling brand of ammonium nitrate ever. Be sure your fertilizer stock includes plenty of "Mr. N" for this Spring's late rush.

Cash in on the big swing to Spencerizing!

SPENCER

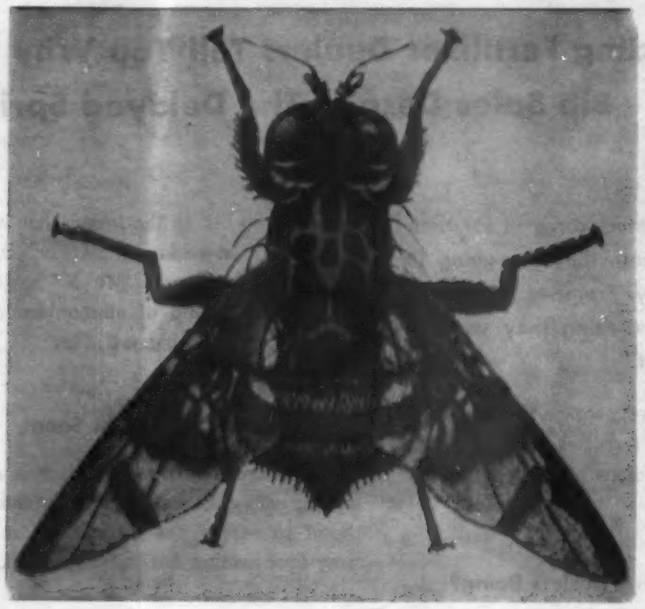
SPENCER CHEMICAL COMPANY . . . Kansas City, Missouri

Producer of 4 Nitrogen Spencerizers for Hungry Crops

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Mediterranean Fruit Fly



How to Identify

This pest is smaller than the common housefly, with a glistening black thorax and a mosaic pattern of yellowish-white lines. A yellowish abdomen with two silvery crossbands mark that portion of its anatomy, and the wings are banded and blotched with yellow, black and brown.

Life History of Fruit Fly

The eggs develop into larvae in from two to three days. The larvae feed inside the fruit for about 10 days, then drop to the ground and enter the pupal or cocoon stage. They remain just under the surface of the ground for about 10 days, during which time they become adult flies and emerge and start the reproducing cycle again. Under optimum conditions, flies may live for as long as a year, but usually, their life span is but a few months. During her lifetime, a female may lay as many as 800 eggs in batches of two or three, or as many as eight to ten. The Mediterranean fruit fly was first discovered in the U.S. in 1929, in Florida. An energetic campaign with state and federal funds eradicated the insect from a large area of the state. None had been found in the U.S. between 1930 and 1956, when it made its appearance again. Quick action and an unprecedented effort by both ground and air application have apparently succeeded in eliminating the pest from the country.

Damage Done by Pest

Maggots developing in the pulp of the fruit devour much of the substance and open the way for fungus and bacterial diseases. Egg punctures made by adult flies affect the shipping qualities of the fruit. Many kinds of fruit are attacked by the Mediterranean fruit fly. These include particularly oranges, grapefruit, peaches, nectarines, plums, apples, and many others. Its depredations could well destroy entire crops of various fruits if the insect should get out of hand.

Control of Mediterranean Fruit Fly

Control of the Mediterranean fruit fly was done with such thoroughness that the pest is thought to be eradicated in the U.S. An all-out effort toward this end was undertaken in Florida in 1957 with baited traps, wide-spread airplane application of insecticides, and quarantine of infested areas of Florida. It was a classic endeavor with a well-planned program requiring the cooperation of state and federal agencies. Watchful eyes will continue to look for recurrence of this insect. Routine trappings along the seacoast, air and border ports, in areas where host crops are produced, in states along the South Atlantic and Gulf Coasts and the Mexican border are being continued as a precaution against possible re-entry of the insect.

Illustration of Mediterranean Fruit Fly from Florida Citrus Mutual Bulletin.

POLITICING

(Continued from page 9)

blocks painted white. Only a small amount of merchandise is displayed on the floor. When a customer gives him an order the merchandise is pulled from the warehouse in the rear.

A door has been cut into the warehouse in the rear of the new projecting building.

Another advantage to the new location is the fact that it is on a railroad siding and carload lots of fertilizer can be unloaded directly from the car. The building also has 11 doors so that a truck may pull up to any one of them and load, thus providing quick service to the customers.

On days when business is slack in the store, Mr. Stallings gets into his car and makes the rounds of the farmers. On Thursdays, for example, stores in Nashville close a half day so that employees may have a few hours off in the middle of the week. Business is usually slack on these days since not many people come to town knowing that shopping will be limited. So Mr. Stallings heads out to see them.

It was on such a day that 27 calls were made on farmers.

"One of us is nearly always out making a call or two," he said, referring to one of his assistants. "We just go out and visit with the farmers and by doing this we can find out just what the farmer is thinking about fertilizer," he said.

Usually, the time of day is passed in the conversations and then they get around to talking about business. The farmer is asked if he has had his soil tested. If he hasn't it's easy to suggest that a sample be taken back for testing.

The samples are then sent out for testing and, when returend, the analysis is relayed to the customer with the same information filed in the store for future reference.

This business of taking a sample when on a personal call beats trying to get a farmer to bring in his samples. So many of them say they'll bring it in, but seldom do. They just never seem to get around to it.

"I'm a strong believer in using fertilizer as the means of developing other sales. In this day and time fertilizer can be used as the means of building up sales for allied lines. At corn planting time, for example, a man comes in for a load of fertilizer and it's the easiest thing in the world to suggest right then and there that he take a bushel or two of seed corn. Be surprised how much we sell that way," Mr. Stallings said.

Another good thing about making personal calls is that the dealer can select his prospects.

"You can sort of pick the farmers who are in a position to buy and who have a good credit rating. In a small town, after one has been in business for a while, you get to know who is good pay and who isn't. So it's a simple matter to build up a select list of prospects to be called on," he said, "noting that the day before he was out to see one large tobacco grower who has an excellent rating.

"That man, even if his crop is a failure, will be able to pay his bill when it comes due. He has the money in the bank," he added.

But, he added a word of caution on the matter of selecting prospects to call on, "Farmers are a sensitive lot since they like to have visitors it doesn't pay to neglect any of them.

"If one isn't careful in making personal solicitations, some grower will hear about the dealer being in a given area and not calling on him. He will come into the store later and ask why he didn't come to see him while out that way.

"So it's best not to neglect anyone. Can't ever tell when it will hurt," he said, adding that it's possible to allocate the amount of time spent with prospects and avoid hurting anyone's feelings.

As to credit, Mr. Stallings maintains his own credit forms which he fills out for the customers, if he doesn't know anything about their credit ratings. On these forms he puts information about mortgages on the farms, their real estate holdings other than farms, approximate income, number of acres in cultivation, etc., and other pertinent facts.

These forms are then processed in his store and the credit that best suits the man is speeded through. It may be through the local bank or through one of the government agencies.

"I know pretty well every farm in this area and I know what the owners can do financially. It's something else you learn from 'politicking,'" he said.

Personal calls, plus soil tests are the backbone of the fertilizer business. Without them a dealer cannot expect to build up a sizeable volume, he believes.

Where farmers desire to do their own spreading, Mr. Stallings will supply them with spreaders free of charge.

When the spreaders are taken out, they are charged to the customer and he knows that if they don't return them they'll have to settle with the store for them. They may be a little late, occasionally, although that isn't too frequently, but so far every one has been returned.

Quincy A. Shaw New Bonneville President

SALT LAKE CITY, UTAH—Bonneville, Ltd., Wendover, producer of potash by solar evaporation, is now headed by Quincy A. Shaw, Jr., of Boston, as president. He succeeds Lockwood W. Ferris of Salt Lake City who resigned several months ago.

Mr. Shaw, a graduate of Harvard University in mining engineering, is a vice president and a director of Mesabi Iron Co., and a vice president and director of North American Mines, Inc., a major stockholder in Bonneville.

FIRM INCORPORATES

CASA GRANDE, ARIZ. — T. T. Wynne is president of the new Tri-State Enterprises, recently incorporated to deal in fertilizers. Mailing address is Route 1, Box 23.

INFORMED

(Continued from page 9)

fertilizer. Yet, only a few have the "know-how" to evaluate such tests. Could time be a factor in farmers not remembering what was being demonstrated? They usually must wait until the next cropping season to put into action what they viewed on a demonstration.

Southern farmers spend considerable time reading about fertilizer. However, it appears, in their opinion at least, that the material they read is of little value. For instance, 65% of the farmers in a Georgia survey indicated they had received information on fertilizer use from publications—but only 9% said it was helpful. Research and extension publications rank lower as a reading source than farm magazines. According to farmers, newspaper articles and fertilizer industry publications do not seem to provide much helpful information.

It appears that exposure to current reading material is not an important factor in up-grading fertilizer use. Apparently, present day reading material hasn't been meaningful; and, in the minds of farmers, hasn't been applicable to their operations. What's the problem? Are we trying to give farmers more technical information than they are able to handle? Many farmers understand little of the chemistry involved in fertilization, and seem to care less. Has our reading material been too general in nature and inadequate in "personal" appeal?

Only a low percentage of southern farmers indicate they have ever heard or seen anything about fertilizer use on radio or TV. And, of those who reported hearing or seeing something, the majority felt it had little or no effect on changing their fertilizer practices.

Is it possible that continued exposure to modern radio and TV advertising has caused farmers to view our messages as "dry" and "non-appealing"? Certainly the radio and TV people know it isn't the big, high-falutin' words that win friends and sell their ideas or products, but the simple everyday words, the easy-to-understand words. They know "I love you" is stronger and more sincere than, "You stir my emotional nature." Too, they know that sound effects and visuals are essential to good radio and TV programming. Can we improve our radio and TV programs by looking to modern advertising for ideas? I would suggest, however, that we don't copy all of their methods.

I have discussed "what" influences farmers to use fertilizers. Now, let's see "who" influences them. Many people seem to be important sources of information. County agents, for example, rank high as a source of reliable and practical information on fertilizer problems. But neighbors and fertilizer dealers are contacted more frequently than county agents. Information obtained from neighbors and dealers, however, is not considered too reliable or useful.

Apparently, southern farmers do a lot of talking to many people about fertilizer use—but in most cases it appears they obtain a different story from each source—which leads to confusion and often disgust. What can we do? Many things—but a starting point would be to "make our programs so simple that even we can understand them." Sounds absurd doesn't it? Maybe so—but if we can't explain it to ourselves, we sure can't explain it to others. We must have everybody telling the same story—not different stories. Simplicity is the only way to do it—not more confusion.

Are we progressing fast enough? In some cases it seems we have probably progressed too far, and we need to back up a little. For instance, the level of basic knowledge about fertilizers is surprisingly low even for the very high users in the South. Most southern farmers, for example, can't tell you how many pounds of nitrogen, phosphate or potash are in a 100-lb. bag of 4-12-12. They seem to have little knowledge of matching fertilizer ratios to soil needs. Fertilizer economics is "Greek" to most of them. In other words, we can't teach XYZ until farmers know ABC.

Is this kind of information important? According to a study made by Dr. Roger Woodworth in Georgia, it is very important. He found that the relative degree of association between basic knowledge and fertilizer use (obtained by partial correlation) was higher than that for total farm sales, acres of open cropland, farm machinery, sources of information, level of training, number of animal units, age of operator and degree of farm ownership.

However, despite the fact that southern farmers have many shortcomings on basic knowledge, they seem to be convinced that fertilizer is needed for successful crop production. For example, the majority feel—that fertilization of pastures is a good idea—that liming pays—that they can afford to borrow for fertilizer—that fertilizer is the "key" to profitable farming—and that fertilizer rates can generally be increased on most crops.

"Everybody wants to go to heaven, but nobody wants to die to get there." This is our dilemma—needed but not wanted. Despite the fact that farmers realize they need fertilizer—they want other things more. But perhaps herein lies the solution to some of our problems. Maybe with some inner searching of soul and tearing of heart—we can view our programs in a different light—and make them more acceptable.

To do this we need, first of all, to be honest with ourselves. We must recognize and stamp in our minds this statement: Farmers don't want fertilizer—they want other things. This statement should be repeated several times each working day, and, so we will not forget it—repeat it on Sunday, too.

Raw, cold, stark facts about fertilizer mean little to a farmer with ulcers, bad weather conditions, payments on the car—and a wife begging for a new cooking range. But if we can show him that fertilizer is the answer to his major wants—faster payments on the car—reduced ulcer pains—and a more lovable wife—then we have made contact. He is happy. We are happy.

But this trick is not as easy as it sounds. We have problems. Many years of formal training in cold, raw facts have dulled our perceptions to a real-life attack. Our constant intellectual expositions into rural areas have probably paralyzed the farmers' minds to acceptance of a real-life discussion on fertilizers. A typical farmer might react to such a discussion this way: "Gosh! Dr. Smith, that nice fellow from the college, talked about my problems today. He never did that before. Maybe he is human after all. Next time he is in town, I want to hear more."

Yes!—"I want to hear more." We are learning the secret of getting our facts into the farmers' brain—by the haze and past the daze. But, the wife's desire for a cooking range still has top billing—not our fertilizer story. But we now have found the secret. Communication is life—it's blood and sweat—it's hopes and dreams.

Now, we see why we can sit down in the office, think up a wonderful speech on soil fertility, stuff a leaflet to the brim with brilliant ideas, put startling facts in a bulletin—$1 invested in fertilizer returns $3—then expose it to our audience and nothing happens. Some intangible element is missing; nobody pays any attention to what we said, yet our audience was looking at us, eye to eye.

Why is this so? We now have it. Communication, being life, is largely a matter of the emotions. We can see there is no such thing as a pure, unadulterated thought. We can't put our ideas or facts on soil fertility in words and simply hand them over to someone else. There must be some emotional bridge—or our ideas and facts are dead; they might as well have never been written or spoken. According to farmers, this is what has happened to most of our material.

How do we establish emotional contact? By more facts? By more brilliant ideas? By more colorful leaflets? Obviously not! We have to become emotionally involved ourselves—communication is life. But that's only half the job. Our audience must get some emotional experience, either real or imaginary; quicker payments on the car—without that, nothing we say will make the slightest difference.

I want to hear more! A farmer's plea which provides the clue to the solution of another problem. A scientific term, used by physicists, is the clue. The term is semantic noise, or negative feedback. What does it mean? Simply this—if you are talking to someone by phone and there is no buzz on the line, they can hear every word you say without your repeating it. However, if there is a buzz in the telephone, you have to repeat your message three or more times.

What does this have to do with our problems? Plenty! It can be the "key" to it. Semantic noise is everywhere. It is deafening at times. Car payments, ulcers, weather conditions, and an unhappy wife are semantic noise. And most of the time it is too deafening for our fertility story to be heard.

What can we do about it? The farmer's plea, "I want to hear more," is our answer. Repeat it five more times. Then, say it 20 more times in 20 different ways. Repeat! Repeat! Repeat! Maybe then someone will begin to catch on—despite their ulcers and car payments.

The Greatest Teacher to ever walk the face of the earth repeated His simple message not once—but many times in different ways. First, He compared the coming of the Lord to the flood that came suddenly in the days of Noah; then He told the parable of the thief; then that of the wicked servant; then that of the foolish virgins; then that of the buried talent, and finally He talked about the sheep and goats.

In the two thousand years that have passed since, that lesson has been preached many times—a redundancy made necessary by tremendous semantic noise. Can we do less with our subject? We must repeat it many, many times, using a "real-life" approach—one that deals with the farmer's major wants.

But let's not kid ourselves. It's not easy to put sensible ideas into "action" programs. It's simpler to stay in the "do-what-everybody-else-does" league. It's easier to remain complex than to bring our programs down-to-earth. Ideas that deal with intangibles are not easy to think up. The pressure around us is overwhelming. The scientific articles, the incoming baskets at the office, the frequent reviews of complex charts and graphs have all tended to dull our perceptions. Plain, truthful, personal language requires original thinking. And, to be original, we must listen to the voice of our hearts rather than the clamor of the world—and have the courage of teach publicly what we have learned—communication is life—not complex bars and curves in a bulletin.

But it can be done! Enemy number one is ourselves—those hidden pockets in our scientific minds which keep saying: It's "undignified." It "isn't done." It "looks sentimental and effusive." Which means, actually, nothing but that we are often afraid to show our feelings, come out of our scientific shell, and speak and write as if we mean what we say. In other words, to speak a language farmers can understand.

How can we expect to make sense to farmers—how can we influence them with research findings, if we don't get behind our ideas with something more than charts and graphs filled with "dry" bars and "confusing" curves which farmers don't understand! Let's be ourselves! Let's listen to ourselves! Put it down the way you'd say it—let's not let ourselves be hog tied by that vague, unwritten law which decrees that as respectable scientists—we must forget the age-old fact that: "communication is, by its very nature, principally more an exchange of feelings and understanding than an exchange of ideas or facts."

What I am saying is nothing new. All great leaders have used it. Churchill in stimulating England for the battle didn't say, "We will defend ourselves if attacked." His well-known voice boomed out with vigor, "We will fight them on every beach-head, on every street." Yes! Mr. Churchill knew that the strongest appeals are

(Turn to page 20)

ANOTHER INFESTED AREA

WASHINGTON — A 20-acre farm in Pulaski County, Illinois, found infested with the soybean cyst nematode, has been added to the area regulated because of this pest. The order, issued by the U.S. Department of Agriculture, became effective March 31.

A public hearing to consider this action was held in Springfield, Ill., on Jan. 26.

On the same effective date minor additions were being made to the regulated areas in Arkansas, Kentucky, Missouri, North Carolina and Virginia. One property in Mississippi County, Arkansas, has been removed from the regulated area.

Beginning June 6, 1960, Croplife will be issued every other week . . .

Mailing Schedule

Production Edition	Marketing Edition
June 6	
	June 20
July 4	
	July 18
Aug. 1	
	Aug. 15
Aug. 29	
	Sept. 12
Sept. 26	
	Oct. 10
Oct. 24	
	Nov. 7
Nov. 21	
	Dec. 5
Dec. 19	

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Introduced a little more than a year ago, Croplife's Production Edition dramatically gained wide reader and advertiser acceptance.

Editorially zeroed-in on the men in charge—production men and management men—the Production Edition provides them with practical information aimed at helping them do their jobs better, faster and more economically. Whatever their specific interest in the area of agricultural chemicals production—liquid or dry formulation, equipment and maintenance, bagging and packaging or materials handling—production and management personnel find a rich and useful fare in the Production Edition.

These men in the plant who formulate and produce millions of pounds of fertilizers and pesticides each year are the men who buy raw materials, processing and handling equipment, and packaging supplies. But most important of all, they are the men who are increasing their business and the potential business of their suppliers every year.

Only Croplife's Production Edition provides advertisers with penetrating circulation to the complete buying team in the agricultural chemicals field.

Only Croplife's Production Edition is edited solely for the men that control the manufacture of agricultural chemicals.

Croplife's Marketing Edition, in addition to reaching key management personnel, covers more than 6,000 important farm chemicals dealers. These are the men constantly on the look-out for better merchandising and selling methods. These are the men whose profits are affected by industry news and trends. And they are the vital link in the manufacturer-to-consumer marketing chain.

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Only in Croplife's Marketing Edition do advertisers have the opportunity to

- pre-condition dealers
- supplement consumer campaigns
- provide sales training "courses" for retail sales personnel

The new Marketing Edition combines the issues that were previously published as Midwest and South marketing editions on a weekly rotating basis.

Croplife . . . the only newspaper serving the farm chemicals industry—will continue to provide complete news coverage and will continue to reach more than 5,000 management personnel with every issue.

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to the heart—not the head—to the emotions—not the mind.

Don't conclude, however, that I am suggesting our presentation be all "blue sky." Quite the contrary—obtain all the latest research available. What I am suggesting is that we play the interesting part up and the solid, factual material will be more acceptable and digestible. In other words, let's not be like the telegraph operator who knows the message—but fumbles the keys.

We know the message—our files and libraries are filled with facts—our economists are eager to supply us charts and graphs, showing it pays to use fertilizer. Facts are not our main problem—our big problem is men with human understanding and ability to express scientific language in terms of the hopes and dreams of farm people. Until this is done, our best-planned soil fertility programs, supported with the latest-known facts, are as dead as weeds in a corn field sprayed with the most deadly poison.

Thurman Arnold, in "The Symbols of Government," has well described the earnest but unrealistic program planner of which I speak: Mr. Arnold says, "They usually bungle their brief opportunities in power because they are too much in love with an ideal society to treat the one actually before them with skill and understanding. Their constant and futile cry is reiterated through the ages: 'Let us educate the people so that they can understand and appreciate us!' "

The farmer's plea, "I want to hear more" gives us an additional clue. It has to do with another word frequently used by scientists—concentration. In everyday, plain English it means—don't scatter your fire—concentrate on a single point. Are we confusing farmers by our multiplicity of "remedies" and "daily routine" of separate and scattered bits of knowledge—a bulletin on lime—a news article on placement—a radio program on nitrogen? Apparently we are, according to survey information. Wouldn't it be better to concentrate our material into a timely, easy-to-understand package? Wouldn't it be better to pin-point our aim to the needs of a farming community or area?

Too, won't the need to concentrate our material into timely, easy-to-understand packages become more important with time? The trend to larger and specialized farming will force the farmer to spend more and more time at his desk, studying cropping histories, new insect controls, number of cattle to graze per acre, amount of protein for his cattle rations, and other things. He will, therefore, have less and less time to devote to our subject—fertilizers. Unless we prepare our messages with these facts in mind, it is possible the farmer will "short-circuit" the college and go directly to some source that will provide the service he wants and needs. This trend is already taking place in some phases of agriculture, such as poultry.

However, all of these clues are meaningless, unless we develop a "sense of urgency" about our task and give out more of that "divine fire of the soul"—called enthusiasm. Fertilizer can be the "catalyst" for a total farm program. Thus, what began with "soil fertility" can give life to use of better seed, insect control, improved livestock—then finer schools—better communities—greater states—and maybe by-and-by better salaries for agronomists. Therefore, it is a story that merits a "sense of urgency" and an enthusiastic approach.

But a "feel of urgency" is never present in the minds of the perfectionist, the "cooler head" and the cynic about human possibilities. A "feel of urgency" is only for those who look past the incoming tide and on beyond to the horizon. For they know, the tide will ebb and flow—but they realize that the future of agriculture lies yonder on the hazy horizon.

Now to enthusiasm—which the ancient Greeks called the "divine fire of the soul." Too many people come to our fertilizer meetings and go away with the feeling that the things we told them about were not so important after all—because there was such a lack of enthusiasm about presenting it. I don't think enthusiasm consists of fist-pounding and shouting. But if fist-pounding and shouting is what is needed to improve southern farm living by up-to-date fertility practices, then I am overwhelmingly for it. Because without enthusiasm, our programs are about as dead as last year's turkey.

Looking to the future, I feel we have much to offer; and, despite our shortcomings, we have made rapid accomplishments. But to keep pace with the rapidly changing times a "face-lifting" is needed. For those inclined to bolt the "do-what-everybody-else-does" league, and who have the courage to lead the way by jolting us out of our mental ruts and who are willing to explore the uncharted regions, I offer these words of encouragement from a rebel that helped pave the future of our great country—Theodore Roosevelt:

"It is not the critic who counts, not the man who points out how the strong man stumbled or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dirt and sweat and blood; who knows the great enthusiasms, the great devotions and spends himself in a worthy cause; who at the best knows in the end the triumphs of high achievement; and who at the worst, if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither defeat nor victory."

Canada Pest Act Regulations Changed

OTTAWA—Changes in regulations under the Canadian Destructive Insect and Pest Act, covering importation of plants with soil, were made earlier this year. An agreement is called for between an exporting nurseryman and the certifying authority in his country which will define nursery land area and ensure, through government soil testing, against the presence of the golden nematode or potato wart disease. It also requires that potatoes or tomatoes not be grown within nursery boundaries. A nurseryman also cannot procure stock from another nursery for export to Canada unless that nursery is already registered.

Importation of plants with soil will be restricted to the U.S. (including Alaska, but not Hawaii), England and Wales, Belgium, Denmark, the Netherlands and the provinces of Schleswig-Holstein and Oldenburg of the Federal Republic of Germany.

Recognizing the economic importance of the golden nematode, Canada took protective measures in 1952. At that time, regulations were passed prohibiting all European countries, except Holland and Belgium, from exporting plants with soil to Canada.

Subsequent representations by England and Wales, Denmark and the two German provinces, led to investigations late in 1958 by W. N. Keenan, former director of the plant protection division, Canada Department of Agriculture, and Dr. L. W. Koch, director of the Harrow, Ont., research station. The revisions resulted from their report which was considered by the Destructive Insect and Pest Advisory Board. Golden nematodes have been found in 35 countries, but Canada so far has successfully slammed the door on them.

BILL FISCHER, farm advisor, Fresno County, and Dr. Bert Krantz, extension soils specialist, University of California, Davis (standing at left and right, respectively), point out the importance of nitrogen and phosphate fertilization for barley at a Fresno County demonstration. Greater growth from nitrogen plus phosphate is shown at the right. Nitrogen alone was used on the barley growing on the left, showing the results of soil phosphate deficiency. Those in the photo are from left to right: George Nelson, assistant district sales manager, Best Fertilizers, Hanford; Mr. Fischer; Milton R. Johnson, Balfour, Guthrie & Co., Fresno; Dr. Krantz; Keith M. Rathbone, Niagara Chemical Division, Food Machinery & Chemical Corp., Fresno.

NON-FARM

(Continued from page 1)

region during 1958-59 was approximately $20,872,000, of which mixed fertilizer accounted for $14,790,000.

As shown in Table 1 (page 20), fertilizer consumption per home is lowest in the largest cities and highest in the residential suburbs of these cities. All of the District of Columbia, 66% of the non-farm population of New York State, and 39% of that of Delaware live in cities of more than 100,000 population. As a result, their consumption rates are below the average for the region, Mr. Mehring points out.

On the other hand, only 26% each of the non-farm populations of New Jersey and Pennsylvania and none of that of West Virginia live in cities of this size. Thus, mean consumption

Table 1

ESTIMATED NON-FARM HOME FERTILIZER CONSUMPTION, BY STATES, YEAR ENDED JUNE 30, 1959

State	Estimated [1] occupied non-farm dwellings Jan. 1, 1959 (Thousands)	Mean fertilizer consumption [2] (Lbs. per home)	Estimated [3] total consumption and its standard error (Tons)
New York	4,941	23.4	57,800 ± 12,300
New Jersey	1,680	55.4	46,500 ± 6,300
Pennsylvania	2,994	48.1	72,000 ± 10,200
Delaware	122	28.8	1,750 ± 450
Maryland	806	70.3	28,300 ± 2,300
District of Columbia	235	14.9	1,750 ± 350
West Virginia	434	50.1	10,900 ± 3,500
Middle Atlantic Region	11,212	39.1	219,000 ± 16,800

[1] Prepared from data in 1950 Census of Housing and estimated changes since.
[2] Adjusted for imperfections in sampling.
[3] Products of preceding two columns rounded off. These totals do not include the additional quantities of fertilizers used for other non-farm purposes, such as golf courses, parks, cemeteries, lawns around business or industrial plants, etc.

Table 2

ESTIMATED FERTILIZER CONSUMPTION ON LAWNS, GARDENS, AND HOUSE PLANTS OF MIDDLE ATLANTIC NON-FARM HOMES, YEAR ENDED JUNE 30, 1959

Kind and grade	Surveyed homes that used it (Number)	Quantity reported (Pounds)	Estimated regional total (Tons)
Mixed fertilizers [1]			
3-12-6	8	870	1,000
4-8-12	2	100	400
4-12-4	2	50	200
5-10-5	332	18,820	38,000
5-10-10	4	200	400
5-20-20	18	12,200	23,000
6-10-4	139	6,860	13,000
6-12-4	10	1,320	2,700
6-12-6	5	670	1,300
6-12-12	3	180	400
7-11-5	10	640	1,300
8-16-16	4	595	1,200
9-9-4	17	2,510	5,000
10-6-5	11	1,000	2,100
10-8-6	17	1,810	3,600
10-10-10	14	4,550	9,200
12-12-12	4	600	1,200
20-10-5	21	1,300	2,700
22 others	22	1,700	3,600
Small package specialties [1]			
6-8-6	5	45	100
20-20-20	33	34.5	70
For acid-loving plants	42	800	1,600
For roses	22	140	300
For house plants	212	127.4	260
10 others	18	34	170

Kind and grade	Surveyed homes that used it (Number)	Quantity reported (Pounds)	Estimated regional total (Tons)
Lawn services	26	600	1,000
Materials			
Ammonium nitrate	9	225	500
Ammonium sulfate	6	175	300
Ammonium nitrate-limestone mixtures	4	20	40
Sodium nitrate	34	200	400
Urea	2	40	80
Dried blood	4	60	70
Dried cow manure	43	2,600	2,000
Dried sheep manure	30	1,721	2,500
Cottonseed meal	30	255	500
Fish scrap	3	414	650
Peanut hulls	4	765	1,000
Sewage sludge, activated	25	2,500	5,300
Sewage sludge, digested	3	750	1,000
Other natural organics	7	300	600
Bone meal	71	1,997	4,000
20% superphosphate	13	601	1,200
Potassium salts	4	40	80
Aluminum sulfate	4	35	40
Miscellaneous	3	700	900
Total	1,300	100,370.7	210,000

[1] Number of products of this grade reported in the survey multiplied by 4,133, which multiplied by the number of homes surveyed gives the estimated total number of occupied dwellings in the region on Jan. 1, 1959.
[2] These were primarily in packages containing 25 or more pounds, but some of which, such as Agrico, Lobe, Fort Pardee, Vertagreen, Tigrex and others also include some smaller packages.
[3] These were principally in packages of 10 pounds or less.

per home in these states is higher than the average for the region.

Maryland, with the highest consumption per home for the region, appears to be an exception to this rule, because 40% of the non-farm population lives in Baltimore. However, well over half of Maryland's non-farm population outside of Baltimore lives in its suburbs and those of Washington where the consumption rate is very high.

Fertilizer applied to lawns accounted for well over half the total consumption.

A summary of frequency distribution of the amounts of fertilizer used per home by size of community, shows that the amount of fertilizer used per family, as well as the number of families using fertilizer, increase as the size of the community decreases.

Exception: New York City

New York is the only city in the over-2.5 million group. As might be expected, a majority (85%) of New Yorkers use no fertilizer during the year, and the maximum reported was 50 lb. which was for a detached home on Staten Island. Only 6.2% of the New York families interviewed consumed more than 2 lb., and all of these lived in Brooklyn, Queens or Richmond.

At the other end of the scale are the unincorporated metropolitan fringes where over one third of the families used over 128 lb. during the year. Only 28.1% of these families were non-users.

About half of the total number of families interviewed used no fertilizer during the year, although some had used fertilizer the year before, and others definitely expected to do so in the following year. A number of the families in the smaller communities that had bought no commercial fertilizer during the year had used barnyard manure, raw sewage sludge, peat, compost or wood ashes.

There are significant differences by occupational classes. While nearly 90% of laboring class families used no fertilizer, nearly 75% of management class families did use fertilizer. Nearly one third of the families in the management class used 128 lb. or more during the year.

Caucasian families use, on the average, nearly three times as much fertilizer as non-whites. The weighted means are 42.9 ± 4.5 and 15.7 ± 2.4 lb. per home, respectively.

This statistical difference is explained by the fact that the proportion of non-whites is larger in the laborer, public service and domestic categories and smaller in the other groups. Furthermore, the non-whites in this region largely are concentrated in the larger cities where usage tends to be quite small for all races. Even so, a few non-whites in the management and professional classes were found to have used substantial amounts of commercial fertilizer.

These results can be interpreted as indicating that differences in consumption rates between whites and non-whites are more closely related to differences in such factors as education, occupation, location and type of dwelling unit than to any particular racial characteristics.

EARNINGS RISE

NEW YORK—Commercial Solvents Corp. 1959 consolidated net earnings rose sharply to $1.02 per share on 2,796,250 shares of common stock, and were double the company's earnings in 1958 and 1957, announced Maynard C. Wheeler, president, following a meeting of the board of directors. Sales for the year of $70,381,175 represented a 9% increase over the 1958 total of $64,727,548. Net earnings for 1959 were $2,850,740, as compared with $1,418,462, or 51¢ per share for 1958, and with $1,449,638, or 52¢ per share for 1957, with the per share earnings for these two years adjusted to reflect the 2% stock dividend issued Dec. 31, 1959.

CHANGES

(Continued from page 1)

the function of dealers. Of late, it has become increasingly apparent that the type of dealer coverage provided by Croplife was no longer necessary in Marketing Editions destined for the western states.

Thus, the Marketing Edition will no longer reach dealers in the western states, but the industry in that region will be covered in depth by the Production Edition.

News coverage in the two editions will be stepped up, particularly in the Production Edition, according to Lawrence A. Long, editor. More staff-written articles, deeper penetration into stories behind the news, additional features with more extensive use of photographs and color will be included in the new program. Format and page size will remain unchanged, but paper stock of the Marketing Edition will be improved to match that currently used in the Production Edition.

Both the Marketing and Production Editions will carry news of the industry on a broad scale in much the same manner to which Croplife readers have become accustomed for the past 6½ years. In addition, a number of editorial innovations are being planned for coverage of the Washington scene and more penetrating analyses of national news as it relates to the agricultural chemical industry.

Croplife's initial aims to serve both the manufacturing and marketing segments of the industry remain unchanged.

"Flexibility is one of the keys to keeping pace with developments in the fields served by Croplife," Mr. Kihlstrum commented. "Thus we feel that by concentrating our marketing edition circulation in the areas which have become most important to the industry within the past few years, we are able to serve the industry better."

The first Production Edition under the new schedule will appear on June 6, 1960. The first Marketing Edition will be dated June 20, 1960. On July 4, another Production Edition will appear, and then on July 18, the Marketing Edition. The issues will continue to appear every two weeks, alternating between the Production Edition and the Marketing Edition.

Editorial and business staffs will remain as they are: Lawrence A. Long, editor; Donald Neth, managing editor; James L. Engfer, editorial assistant; John Cipperly, Washington correspondent; Wilfred E. Lingren, advertising director; Wayne Soule, advertising representative, Minneapolis; Don E. Rogers and Amos W. Standish, Chicago; Martin E. Newell and Thomas E. Letch, Kansas City; Paul L. Dittmore and Archy S. Booker, Jr., New York, and Maurice A. Kimball Co., Los Angeles and San Francisco.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Hope Seen in Supreme Court's Refusal to Review Case Against Gypsy Moth Spraying

THE RECENT refusal of the U.S. Supreme Court to review the suit brought by a number of Long Island residents to stop large-scale spray problems for control of gyspy moth, appears to be an event of considerable significance. It marks the end of the road for the case of the plaintiffs who wanted to strike back at the U.S. Department of Agriculture. They didn't like the idea of being "doused" by pesticidal sprays . . . they feared dire consequences from the effects of DDT on the land and around homes . . . and they resented the alleged intrusion of their privacy.

There can be no doubt about their diligence and intentness. Any group willing to spend thousands of dollars to prove a point must be in deadly earnest . . . and it isn't every case that is appealed to the U.S. Supreme Court.

A number of conclusions might be drawn from this story. One, of course, is that massive spray programs, such as that initiated by the government to eradicate gypsy moth, are legal. They are mostly certainly in the public interest. Another point is that these plaintiffs, despite all the noise made by their protestations, were unable to convince the courts that any economic damage was done to their properties through the spray program.

Although the Supreme Court gave no reason for its denial of review of the case, it can be assumed that to a majority of the Justices, the whole matter must have appeared rather petty. We can think of a number of issues, facing the country just now, of more importance to the Supreme Court than taking its time to hear more fears expressed about DDT.

One thing surprised many people in the trade, however. That was the dissent voiced by Justice William O. Douglas who said that the case should have been heard. Mr. Douglas of course has every right to express his views, but the puzzling feature of his dissent lies in references to widespread fears about the effects of pesticides. "DDT has been said," he noted, "to cause sterility among our bald eagles" and to have a bad effect on birds and other wildlife in general and possibly to be a factor in human blood diseases. In so speaking, the Justice reveals an astonishing lack of toxicological information about pesticides.

From the standpoint of the plaintiffs who failed to get their case reviewed by the high court, the remarks of Justice Douglas may be worth a great deal for future quotations. It seems that the whole question of mass spraying for control of various insects has deterioriated from the realm of scientific examination into the emotional approach. This renders statements by well-known people very valuable propaganda-wise, regardless of whether such statements have much technical verification.

* * *

ON THE OTHER side of the coin is the impending symposium on chemicals in foods scheduled to be held by the U.S. Department of Agriculture later this month. Here papers will be presented by leading scientific authorities on the general topic of "The Nature and Fate of Chemicals Applied to Soils, Plants, and Animals." These papers will be authentic, dispassionate, objective, and completely factual. Authors will be men well qualified to speak on the subject and what they say will have the ring of authority.

We hope that reports on what is said at this symposium will be given widespread publicity . . . that talks giving a true picture of the role of pesticides might somehow get to the public in an understandable manner. Probably much of the material coming out of the USDA symposium will appear "stuffy" to many. Reports on toxicological data can hardly stir the kind of excitement created by an innuendo that pesticides or chemical fertilizers may cause cancer.

Yet, from this forthcoming three-day meeting at the Beltsville research center of USDA will come a great deal of the information to be used in offsetting the torrents of irresponsible talk with which pesticides have been blasted of late.

Areas of discussion will include three broad aspects of chemicals in agriculture. These are: the responsibility of various government agencies and industry toward the problem; progress and problems in the use of various important groups of agricultural chemicals; and the fate of these chemical products once they are applied to plants, soil, and animals.

Banker Lauds Fertilizer Use

BANKERS ARE often pictured as steely-eyed individuals who sit behind well-polished desks thinking of reasons why money should not be loaned to seekers. Such an image may have been true at one time, and may still be accurate in some cases today, but it is not universally the case.

Many bankers have learned the value of fertilization on the farm and are not only willing, but eager, to lend money for that purpose. Such a person is E. W. Jarboe, vice president of the Spokane branch of the Seattle First National Bank. "If you want to succeed in farming," he says, "you have to practice scientific, high-yielding, business-like farming methods." He views soil fertility as the key to high-yield farming and adequate fertilization as the key to soil fertility management.

Here are some quotes from this banker whose philosophy should make the fertilizer industry realize what potential friends money loaners can be if they are given information about the returns from fertilization and are thoroughly sold on the merits of plant food application.

"Fertilizer costs are small compared to other production costs and efficient fertilizer use can increase profits. The money spent for fertilizer will be less risky and will reap more profit than money spent for most other things around the farm," Mr. Jarboe points out.

"Before government regulations and allotments, the farmer who owned a section of land was generally able to make a good living and lay aside some money. He can do the same today, but only through the use of fertilization."

He points out that in Adams County, Washington, one of the nation's five top wheat-producing counties, the average yield increased from 25 bu. an acre to 37 bu. in just five years—mostly due to chemical fertilization. The county's 1959 crop was larger than the 1953 crop, and it was grown on a third less acreage because of allotments.

"Fertilizers are so much an integral part of farming these days that it makes me wonder how we got along before commercial fertilizers were available. I have noticed that the better farmers follow new developments in the use of fertilizers very carefully and in financing farmers we take an interest in their farming practices," he says.

"We look at the man, the farm, the area, the soil fertility and productivity and the general financial condition before we make an operating loan. And we are well aware," he adds, "that with reduced acreages and higher operating costs, our farming picture would be worse than it is, were it not for proper use of fertilizer. We encourage our farmers to know and use good fertilizer practices."

Croplife's Home Office

Croplife®

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NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop area) basis with a mailing schedule which covers consecutively, one each week, three geographic regions (South, Midwest and West) of the U.S. On the fourth week, production personnel in fertilizer manufacturing and pesticide formulating plants throughout the U.S. are covered in depth. To those not eligible for this controlled distribution, Croplife's subscription rate is $5 for one year ($6 a year outside the U.S.). Single copy price 25¢.

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Donald Noth, Managing Editor

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WESTERN STATES — The Maurice A. Kimball Co., Inc., 2550 Beverly Blvd., Los Angeles 57, Cal. (Tel. Dunkirk 8-6178); The Maurice A. Kimball Co., Inc., 681 Market St., San Francisco 5, Cal. (Tel. Exbrook 2-3365).

EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Franklin 4-5200. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 40, Minn.)

Associated Publications—The Northwestern Miller, The American Baker, Farm Store Merchandising, Feedstuffs, Milling Production, Feedlot, Professional Nursing Home

Oct. 10-11—Second Annual 4-State Aerial Applicators Conference, Hotel Chinook, Yakima, Wash., Norkem Corp. is sponsor.

Jan. 11-13—Agricultural Ammonia Institute, 10th annual convention, Memphis, Tenn.

Meeting Memos listed above are being listed in this department this week for the first time.

June 9-11—Manufacturing Chemists' Assn. 88th annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 13-15—National Plant Food Institute annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 13-16—Western Society of Soil Science meeting, University of Oregon, Eugene, Oregon.

June 21-22—Eighteenth Annual Convention, Association of Southern Feed & Fertilizer Control Officials, Riverside Hotel, Gatlinburg, Tenn. For further information, write Maurice B. Rowe, secretary-treasurer, Department of Agriculture, 1119 State Office Building, Richmond 19, Va.

June 27-29 — Northwest Section, American Society of Range Management summer meeting, John Day, Oregon.

June 27-29—Pacific Branch, Entomological Society of America, Davenport Hotel, Spokane, Wash.

July 11-13—North Central Agronomy Society, Summer meeting, University of Minnesota Farm Campus, St. Paul, Minn.

July 13-15—Eleventh Annual Fertilizer Conference of the Pacific Northwest, Hotel Utah, Salt Lake City; B. R. Bertramson, State College of Washington, Pullman, Wash., chairman.

July 27-29—Great Plains Agricultural Council, 1960 meeting, Laramie, Wyo.

July 27-30—Southwest Fertilizer Conference and Grade Hearing, Galvez Hotel, Galveston, Texas.

Aug. 2-3—Ohio Pesticide Institute, Ohio Agricultural Experiment Station, Wooster, Ohio.

Aug. 15-23 — Seventh International Soil Science Congress, University of Wisconsin, Madison, Wis., Prof. Emil Truog, Congress Manager, Soils Building, College of Agriculture, Madison 6, Wis.

Aug. 21-25 — Canadian Fertilizers Assn., annual convention, Manoir Richelieu Hotel, Murray Bay, Quebec, Canada. H. H. Skelton, P.O. Box 147, Hochelaga Station, Montreal, Que., Canada, general chairman.

Aug. 25-27—Mississippi Soil Fertility and Plant Food Council, 1960 meeting, Buena Vista Hotel, Biloxi, Miss.

Sept. 24-26—Western Agricultural Chemicals Assn., 31st annual meeting, Palm Springs Riviera Hotel, Palm Springs, Cal.

Sept. 27-29—Annual meeting of National Agricultural Chemicals Assn. for 1960, Hotel del Coronado, Coronado, Cal.

Sept. 29-30—Northeast Fertilizer Conference, Hotel Hershey, Hershey, Pa.

Oct. 5-6—Southeast Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Oct. 17-21—48th annual National Safety Congress, Fertilizer Section, LaSalle Hotel, Chicago.

Nov. 13-15—California Fertilizer Assn., 37th annual meeting, del Coronado Hotel, Coronado, Cal.

NAMED MANAGER

MILWAUKEE, WIS. — Appointment of M. M. York to the position of manager of marketing of the industrial equipment division has been announced by Allis-Chalmers. In his new capacity, Mr. York will be responsible for overall direction, including organization, planning and coordination of sales and distribution activities of the division, products of which include processing machinery, compressors, motors, control equipment, rectifiers, and pumps.

CALENDAR FOR 1960-61

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Harold W. Caldwell Joins Allied Chemical

NEW YORK—Harold W. Caldwell has joined Allied Chemical's Nitrogen Division as a sales trainee in the Indianapolis, Ind., district.


H. W. Caldwell

He holds a bachelor of science degree in industrial management from the University of Rhode Island, and is a native of Birmingham, Ala.

Mr. Caldwell is the son of Commander and Mrs. Benjamin F. Caldwell of that city.

California Fertilizer Sales in 1959 Break All-Time Mark

SACRAMENTO—Farmers and gardeners in California used nearly two-and-a-half million tons of fertilizing materials during 1959, according to the California Department of Agriculture.

William E. Warne, director of the department, said tonnage license tax reports from firms selling in California show sale of 1,268,756 tons of commercial fertilizers and 1,181,342 tons of agricultural minerals during the calendar year 1959. He said commercial fertilizers were up 11% and agricultural minerals were up 20% over the totals for 1958, and both establish all-time record high marks.

"California farmers have apparently found that commercial fertilizers in liquid form fit in well with their agricultural practices," Mr. Warne said. He pointed out that liquid materials accounted for 41% of the total tonnage. Ammonia solutions alone accounted for 273,415 tons, the largest single item in the tonnage figures, and made up 22% of the total.

The detailed data compiled quarterly show separate tonnages of 35 kinds of commercial fertilizers and 19 kinds of agricultural minerals.

The major agricultural mineral used by California farmers is gypsum. Sales in 1959 totalled 1,086,089 tons, an all-time high. Mr. Warne said more agricultural gypsum is used in California than in the remainder of the country. He explained that much of it is dug from shallow surface deposits along the west side of the San Joaquin Valley and hauled by trucks directly to the farms on which it is spread.

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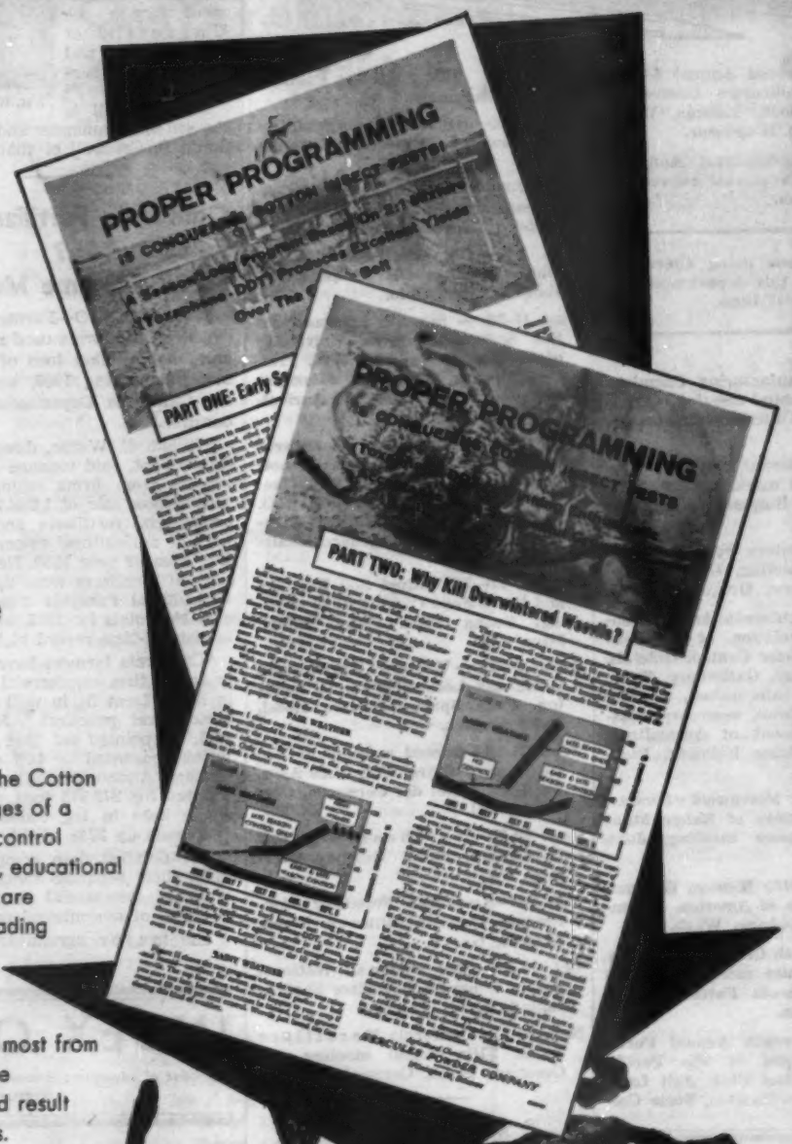

To help farmers throughout the Cotton Belt understand the advantages of a planned, season long insect control program based on toxaphene, educational advertisements such as these are currently appearing in the leading farm publications.

Reaching more than two million readers monthly, they help the farmer get the most from his insecticide dollar, increase confidence in insecticides and result in improved sales for dealers.

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